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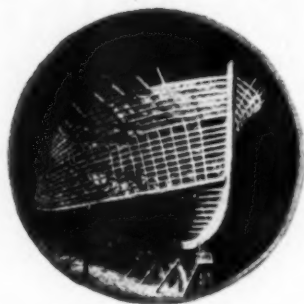
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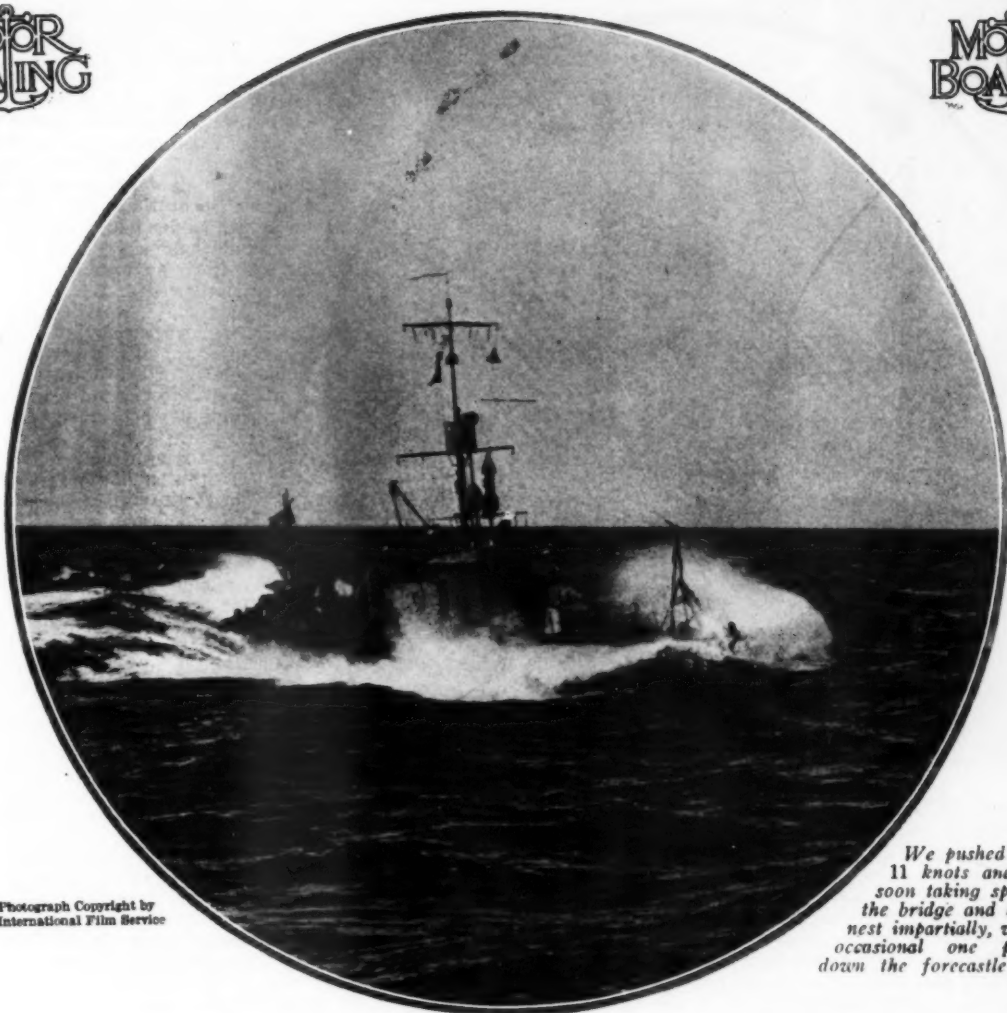
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**MOTOR
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*We pushed out at
11 knots and were
soon taking spray on
the bridge and crow's-
nest impartially, with an
occasional one pouring
down the forecattle hatch*

Bermuda to New York on the Winning Chaser

The Fastest, Most Remarkable, and Spectacular Ocean Trip Ever Made by a Fleet of Motor Boats—The Subchasers End Their Foreign Service in a Blaze of Glory

By Ensign Alfred F. Loomis, U. S. N. R. F.

Executive Officer S. C. 131

THE Bermuda race, the classic long-distance event of the motor boat world in pre-war days, has been run again, out of season and under adverse weather conditions, and a new time set that is likely to stand against the annual efforts of many peaceful cruisers. On the afternoon of August 16 six of Uncle Sam's U-boat chasers, selected from the last convoy of chasers returning from European service, started after the record for the run between Bermuda and New York, and on the morning of the nineteenth five of them finished at Ambrose Channel Lightvessel within the fastest time of previous performers. The sixth, although breaking a crankshaft early in the run, finished on two engines in better time than was ever made by Dream. The winner, the S.C. 131, romped home in 56 hours and 56 minutes, beating the best previous elapsed time of the course by 8 hours and 43 minutes.

But this race of the warring submarine chasers, featured in the national press and filmed for those millions who take their news from the moving picture screens, was not a speed but a reliability contest. It was run with an umpire aboard each chaser to secure gas engine data for the engineering bureau of the Navy, and it was proposed

to the Department by Captain C. P. Nelson, U.S.N., as an opportunity to show in a spectacular way what Navy motor boats with 25,000 miles of war service behind them could do in the line of duty.

The contest had its origin in Ponta Delgada, the Azores, where in the latter part of July the U.S.S. Leonidas and her convoy of chasers were making ready for the run to Bermuda. The idea of the race occurred to me there, and I had talked it over with my commanding officer, Lieut. J. L. Day, U.S.N., of the 131; we agreed that at the least it was worth putting down in black and white as a suggestion for the consideration of Captain Nelson. So I drafted a letter recalling the past performance of Dream and pointing out the advantage of securing publicity for the submarine chasers, and despatched it to the Leonidas. My primary reason for desiring the race—that if run it would conclude our European service within a stone's throw of my home in New York instead of in some foreign port like Norfolk—was tactfully omitted from the letter.

Captain Nelson, who regards the subchasers, and especially his old Adriatic detachment, as the apple of his eye, accepted the suggestion with enthusiasm and cabled to



Washington for authority to run the race, emphasizing its importance from an engineering standpoint. By the time we reached Bermuda the cables and radio had been used to such effect that all plans were laid, and it was only necessary to select six contestants from twenty-six ambitious chasers. When the final selection, based on war history, was made, S.C. 90, 129, 131, 217, 224, and 351 were designated as the racing boats, and the only disappointed crews in the convoy were those attached to S.C. 1, 98, 99, 100, 101, 103, 137, 143, 148, 151, 226, 227, 257, 258, 260, 262, 271, 321, 322, and 324.

We anchored in Grassy Bay, Bermuda, on the afternoon of August 8, and a week later Leonidas, Hannibal, Chestnut Hill, tugs, and the twenty non-racing chasers set sail for New York. During the week all hands had painted ship and overhauled their power plants, and the racing boats had pulled out on a slip in the Royal dockyard to have the heavy guards protecting their listening tubes removed from their keels. Except for the removal of these cumbersome blocks that had always reduced our speed a knot or so, the racing chasers were in service condition with full armament and ammunition supply; and when on Saturday afternoon we shoved off for home our gas and water tanks were full and we had rations aboard for twenty days at sea.

The start was made on August 16 at 4:21 P.M., seventy-fifth Meridian time, from a line bearing 120° from St. David's Head, and between our escorting tug Ontario and the British tug St. Abbs as stake-boats. As an indication of the official character of the race and an expression of his good will toward the 100 or more submarine chasers that had stopped in Bermuda going to or from the war zone, Vice-Admiral Morgan Singer, R.N., commander of the British forces in Bermuda and the West Indies, hauled down the starting signal from St. Abbs and waved

S.C. 131 just after winning the race from Bermuda to New York in the remarkable time of 56 hours and 56 minutes

us a hearty godspeed. With the crew in whites and our port rail manned for Admiral Singer, the 131 crossed the line a naval vessel. Ten minutes later with trisail set and all hands in working clothes we were a racing motor boat, out to smash existing records for the course. The six of us and the tug Ontario remained closely bunched until rounding Kitchen Shoal Buoy at 4:50, but then under the individual judgment of the commanding officers the chasers spread out as they assumed their standard course and speed.

Mr. Day and I, working independently, had decided upon 315° True as the best course, for this, if carried through, would allow for the northeasterly drift of the Gulf Stream and place us at the upper limit of the current on a direct line between Bermuda and Ambrose Channel. It soon became apparent, however, that this course was carrying us somewhat to the left of the other chasers and we took azimuths of the sun to check up on our compass error—a thing which, owing to the magnetic disturbances around Bermuda, we had not deemed it advisable to do in the smoother waters of Grassy Bay. But an accurate bearing from the flying bridge of a subchaser is an impossibility in any kind of a seaway, and our azimuths differed by two degrees, mine showing one degree of easterly deviation on the ship's head, and Mr. Day's one of westerly. Consequently we accepted the deviation card at its face value—zero degrees deviation—although neither of us was surprised on obtaining the noon position the following day to learn that despite the wind we had hauled a couple of miles to westward of our D.R. position.

The primary condition of the race rules related to revolutions, it stipulating that if a contestant exceeded a maximum of 400 r.p.m. on any engine it would be disqualified. This condition, framed to eliminate excessive wear and tear on the well-used motors, made it incumbent on all to maintain high average speed throughout the race, for in the event of a close finish none could clap on the few final revolutions of his engine's capacity to



Captain Courtney congratulating Lieutenant Day and Ensign Loomis of the winning S. C. 131. Mr. Loomis was Associate Editor of MOTOR BOATING when war was declared and immediately joined the U. S. N. R. F.

bring him home the winner. The principal check on speed, however, was not one of racing rules, but of fuel consumption. Each entrant carried 2,400 gallons of gasoline in his tanks and 500 in drums on deck, and this, while seeming an enormous quantity to the small-boat man, was insufficient to carry a chaser the whole distance at more than 400 r.p.m. It therefore devolved on each skipper to calculate his speed according to the fuel economy of his motors, bearing in mind all the time that someone else might boost his revolutions a little and cross the line ahead of him, although losing technically on excess gasoline consumption. That there was nothing freakish in this circumstance may be judged from the fact that the winning boat was credited also with first place in engineering efficiency.

Our speed plan for the race, which had been carefully worked out in advance by Mr. Day, called for an average revolutions on the first day of 350 on all three engines, a slowing down during the eighteen hours of crossing the Gulf Stream, and the maximum of 400 r.p.m. after clearing that usual tumultuous current. So, despite the heavy chop making up from the southwest as we cleared the reefs of Bermuda, we pushed out at 11 knots and were soon taking spray on the bridge and crow's-nest impartially, with an occasional green one pouring down the fore-castle hatch.

S.C. 217, commanded by Ensign G. C.



The winning chaser, No. 131. This motor boat, as well as each of the other 400-odd chasers, was powered with three 200 h. p. Standard motors, every one of which gave 100 per cent service, 100 per cent of the time

O'Donoghue, had crossed the line just astern of us but by sundown had forged ahead with the S.C. 90, Lieutenant Oscar Borgeson commanding, a boat length or two in the lead of him. The other three chasers had dropped a little astern, but all seemed to be maintaining their positions without difficulty.

During the first night at sea the wind veered intermittently from dead ahead to our port beam and back again, and we doused our sail when it was seen that it had ceased to offer the slight assistance which a spread of canvas can give a chaser in a fair wind. Violent rain squalls flattened the surface of the sea while drenching us, but as they were attended or succeeded by puffs of wind that raised the bumps again, we passed a wet and uncomfortable night of it.

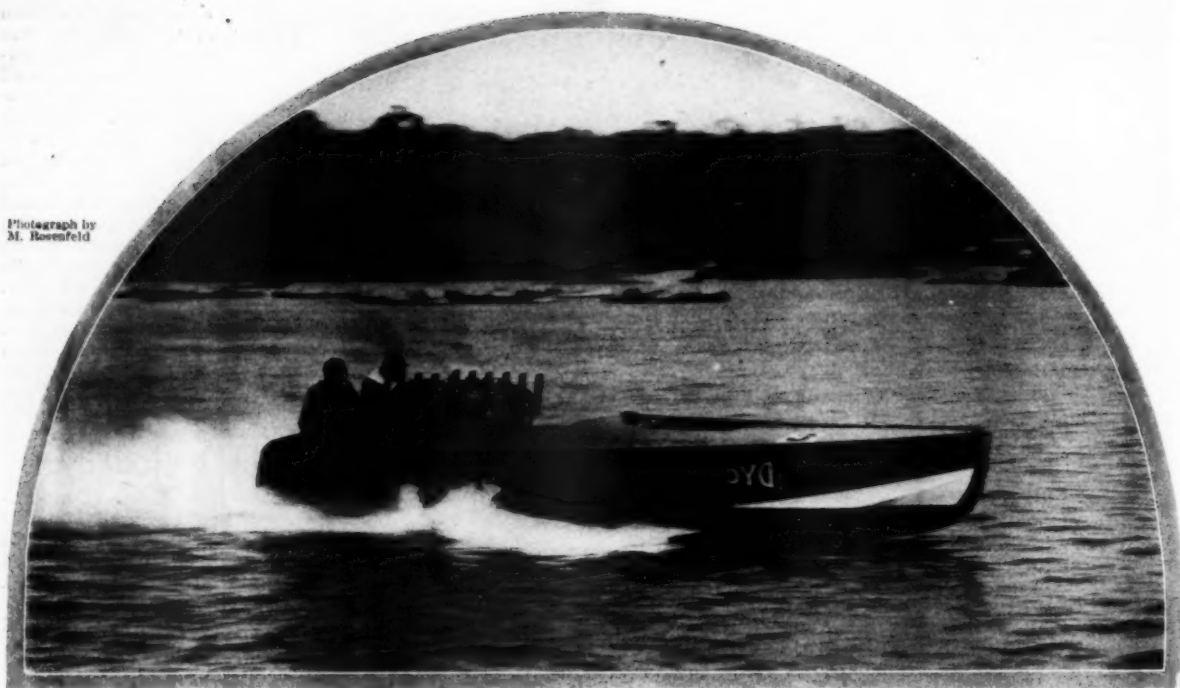
Toward morning we overtook and passed 90 and 217, observing at the same time that 217 was about to wrest second place from 90, and by noon when we were in Lat. 34° 50' N and Long. 67° 43' W and twenty hours out from Bermuda, we were sailing a lone course, with our nearest competitor over the horizon astern of us. It was now nearly time, according to previous calculations, to reduce speed, but on measuring the tanks and making the necessary computations it was found that we had averaged only thirty-six and a half gallons an hour for the three engines and could afford to speed up a trifle. So, with Umpire Charles Dodge, CMM, standing

(Cont'd on page 19)



After the chasers had finished the race at Sandy Hook they proceeded in battle formation up New York Harbor

Photograph by
M. Rosenfeld



Miss Detroit III, winner of the Gold Cup for the second consecutive time, running at a speed of about 60 miles an hour

Miss Detroit III Again Wins the Gold Cup

A Contest Between Hydroplanes Powered with Aviation Motors Which Brings Together Only Three Craft and Fails to Establish Any New Speed Records

By Charles F. Chapman

THIS year's Gold Cup Races, held at Detroit late in August and early in September, for the American Power-Boat Association Championship of North America, demonstrated once more, and perhaps more emphatically than ever, that hydroplane racing, especially as conducted at the present, is a failure and, from the standpoint of the sport of motor-boat racing, should be abandoned altogether. There are greater possibilities in other forms of motor-boat racing which should be worked into shape by another year, so that a real race meet will be possible.

From the angle of sociability and getting the yachtsmen and racing enthusiasts together, the recent Gold Cup Regatta was a decided success. Also from the viewpoint of providing the "gallery" with excitement and momentary thrills, the Detroit races were above normal. But from a strictly racing standpoint, the races can hardly be rated a success.

Altogether seven clubs sent in chal-

lenges for the trophy, which represents the zenith of American hydroplane competition and speed. One of these, that of the Lake George Regatta Association, with its champion, Whip-po-Will, Jr., owned by Commodore Judson, was withdrawn several weeks before the regatta, owing to the illness of the owner. The entry of Miss Minneapolis was later withdrawn. Of the other five entries, only two

could be found which were able to finish a single race of the three. In fact, Miss Belle Isle and Arab IV never were in condition for even a start. The third, Eleventh Hour, appropriately named, as her keel was only laid two weeks before the races, was an also-ran in the first heat, after all other boats had finished and sank in the second heat and made almost 2 laps in the third before she was compelled to drop out because her propeller dropped off, and even Eleventh Hours cannot make championship speed without a propeller.

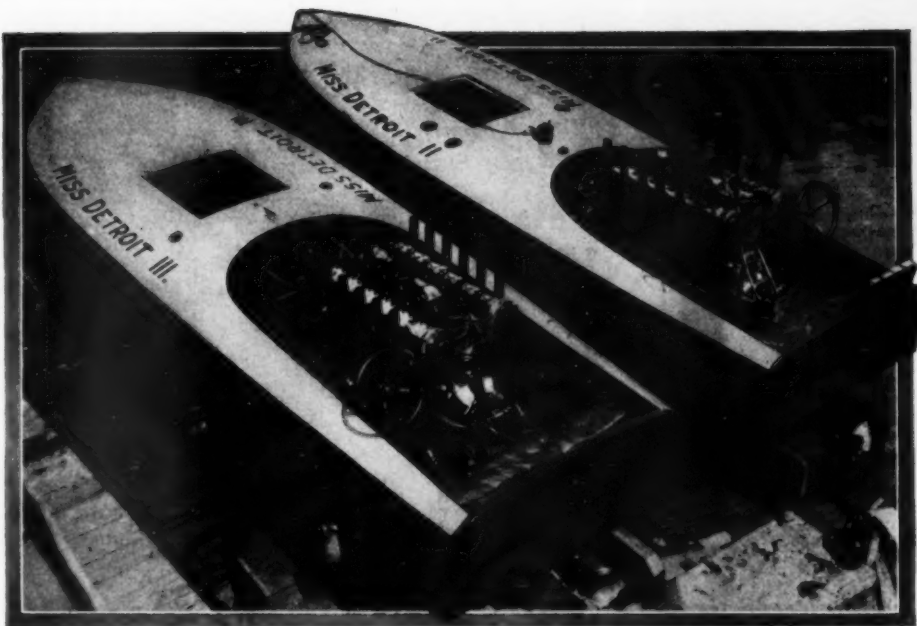


Gar Wood and his mechanic, Jay Smith. In every race they have sailed in for the last several years they have carried their mascot of two Teddy bears

The two boats which did race were Miss Detroit II and Miss Detroit III. They were both owned by Garfield A. Wood of Detroit. No. 2, as she was dubbed, represented the Miss Detroit Power Boat Association, that organization of prominent Detroiters which sprang into existence in 1915 when Miss Detroit I was built and sent east to take the Gold Cup to the west, where it has been ever since, and from the present indications, where it is apt to stay for several years more. Miss Detroit III represented the Detroit Yacht Club, without doubt the most enthusiastic racing club in the country.

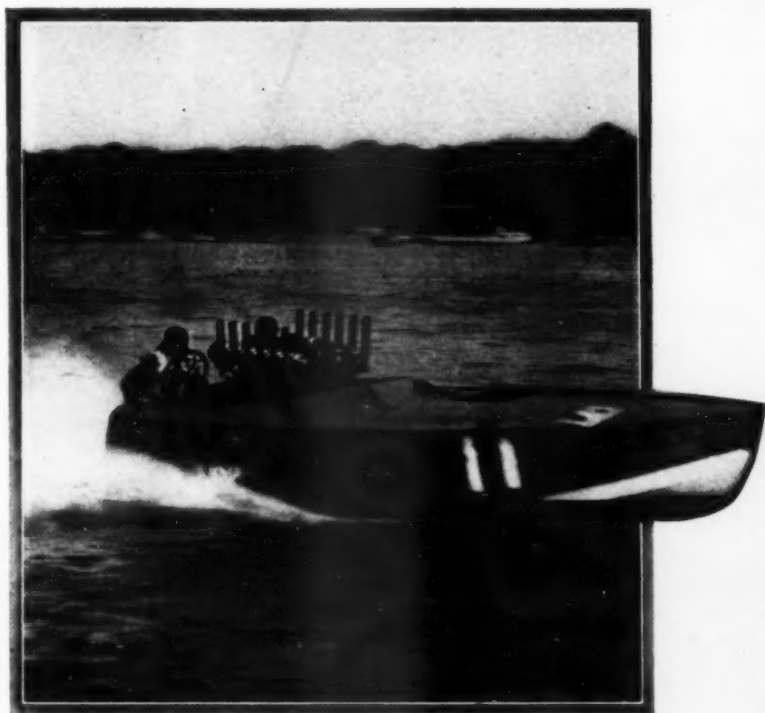
Both Miss Detroit II and III are well known boats in the sphere of hydroplane racing. The former boat is the one which successfully won the Gold Cup at Minneapolis in 1917, making speed records at that time which have not since been bettered. She was then powered with an eight-cylinder Sterling racing motor of about 250 h.p. In the 1918 Gold Cup Races, Miss Detroit II was also a contender, but was defeated by her younger sister, Miss Detroit III.

Miss Detroit III, which proved the winner in this year's races, was also the successful defender at Detroit in 1918. Her victory this year makes history, as it is the first time in the sixteen years in which Gold Cup races have been held that the same boat has ever won the trophy twice.



Looking down upon Miss Detroit II and Miss Detroit III, giving one an excellent idea of the twelve-cylinder Liberty motors with which these boats are powered. Hulls are 20 feet in length and have a beam of approximately 8 feet

Although both Misses Detroit may be called old craft, yet in many respects both were new outfits, at least we can truthfully say so if their power plants are the deciding points as to what constitutes such. Both Miss Detroit II and III were powered with twelve-cylinder Liberty aviation motors, built by the Packard Motor Co., of Detroit. Eleventh Hour also had a Liberty motor. Miss Belle Isle was powered with a twelve-cylinder Van Blerck aviation motor, and the other entry, Arab IV, had a Curtiss aviation motor. Thus, for the first time in history, we find all the boats powered with aviation motors, to the entire exclusion of



Miss Detroit II, winner of second place in the Gold Cup Races. She won the Gold Cup in 1917 at Minneapolis and established a world's record at that time when powered with an eight-cylinder Sterling motor



"Doc" Sandborn, helmsman of Miss Detroit II, and his mechanic, Bernard Smith, brother of Jay Smith

marine engines.

The power plants in the Detroit II and III were set well aft in the hulls and connected through the usual form of gear box to the propeller shaft. Joe's gears and Hyde propellers were used on both boats. The hulls were the same Smith 20-footers which had been victorious in previous years. Even with the increase in power this year, the hulls stood up wonderfully well and showed the results of Chris Smith's many years of practical experience with hydroplanes. We can say with little fear of contradiction that C. C. Smith, of Algonac, Mich., is the world's greatest hydroplane designer. His boats have won every Gold Cup race since 1913, and in every instance have been alone in their class, winning with apparent ease. To design a hull which can withstand all the punishment of a 400 h.p. motor driving a hull at better than 60 miles an hour, is an art in itself. To date, no other designer in the country has been able to do this except Smith, although several have tried, but in each instance the effort has been a failure. In some instances the failure seems to have been the result of circumstances and hard luck more than anything else, and



The officials at ease. Left to right: J. Lee Barrett, secretary of the Gold Cup Committee; Harry Sampson, chief timer; C. F. Chapman, secretary of the Racing Commission of the A. P. B. A.; Captain D. F. A. de Otte, U. S. N., in charge of the patrolling of the course; William E. Metzger, representing the Miss Detroit Power Boat Association

at other times the races have been held during unfavorable weather conditions, which has contributed largely to the failure. Yet the Smith boats have been subjected to the same conditions and elements, but have come home the victor every time. Failure of the power plants has also contributed largely to the misfortunes of racing, but it is our opinion that they alone are not to blame. If we had a few more designers in this country of the ability of C. C. Smith, and the inclination to stick at it until they did succeed, we would have more real hydroplane racing in this country and not as many fiascos which blow up as a bubble.

The hull of Eleventh Hour was designed and built by Hacker of Detroit. Her power was a twelve-cylinder Liberty, the same as the Detroit. With the three boats powered with motors of the



Eleventh Hour seen after her plunge after completing one lap in the second day's race



Eleventh Hour under way. Note how she rides on an even keel and the great volume of water thrown upward at her stern

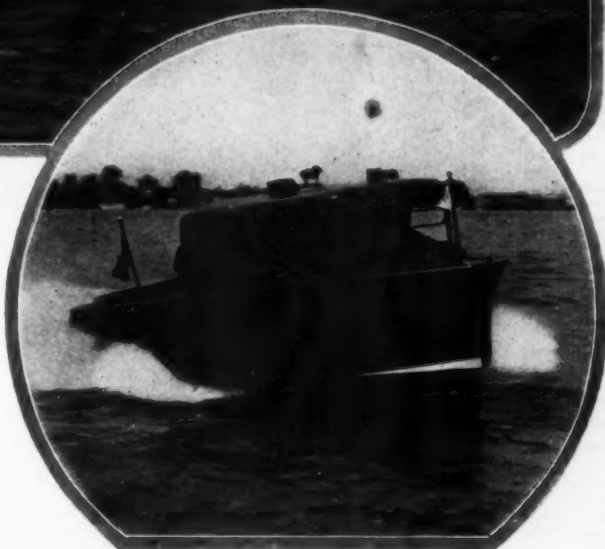
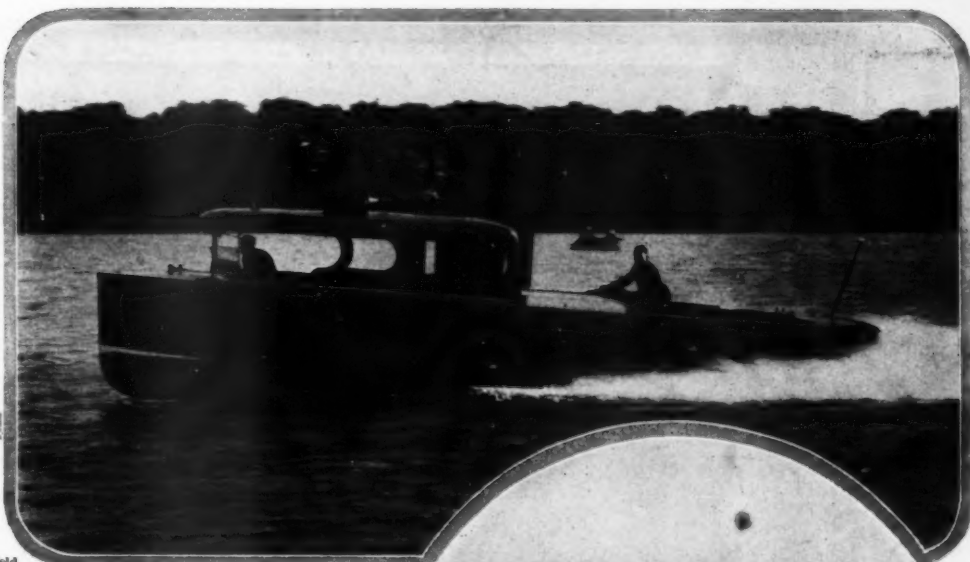
same horsepower, we thought we were going to see the merits of the designs of Hacker and Smith compared under actual racing conditions. They have been racing in the columns of the press of the country for years until they reached speeds of between 70 and 80 miles an hour, but never until now had they come together (Continued on page 58)

Gar, Jr.

A Thirty-Five
Foot Express
Cruiser Pow-
ered with a
Liberty
Motor

Photographs by M. Rosenfeld

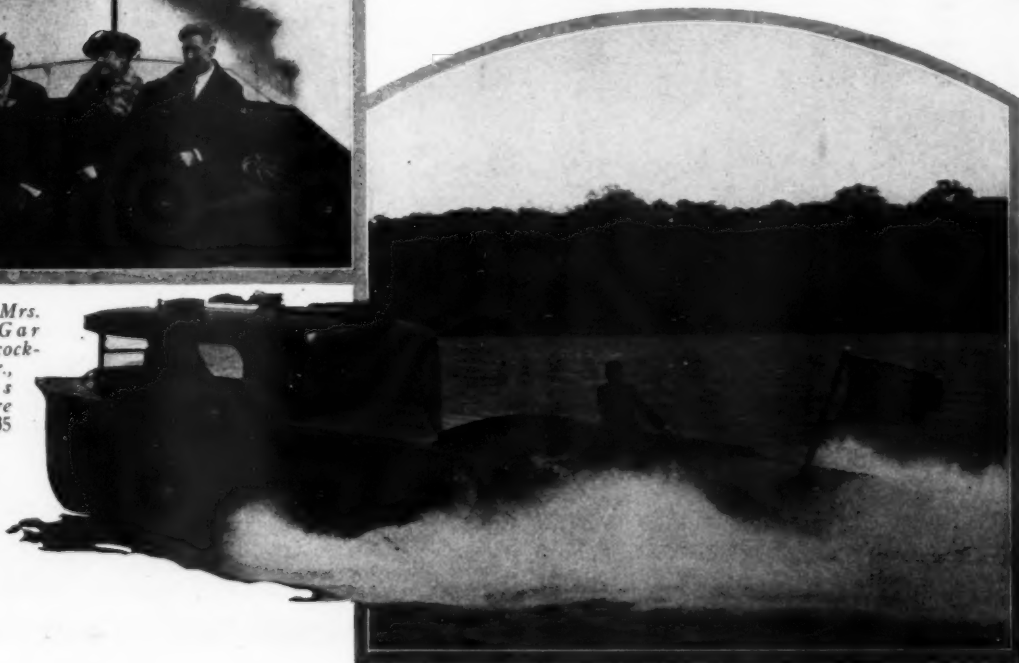
THE boat of the year about which the greatest amount of interest centers judging from her popularity at Detroit at the time of the Gold Cup Races is Gar, Jr., the speedy express cruiser owned by G. A. Wood, of Detroit. This craft is the product of the brains of both Mr. Wood and Chris. Smith, and while primarily built to meet the requirements of an express cruiser under the A. P. B. A. definition of same, yet she proved so much of a success
(Continued on page 56)



Several views of the express cruiser
Gar, Jr., at a speed of 35 m.p.h.

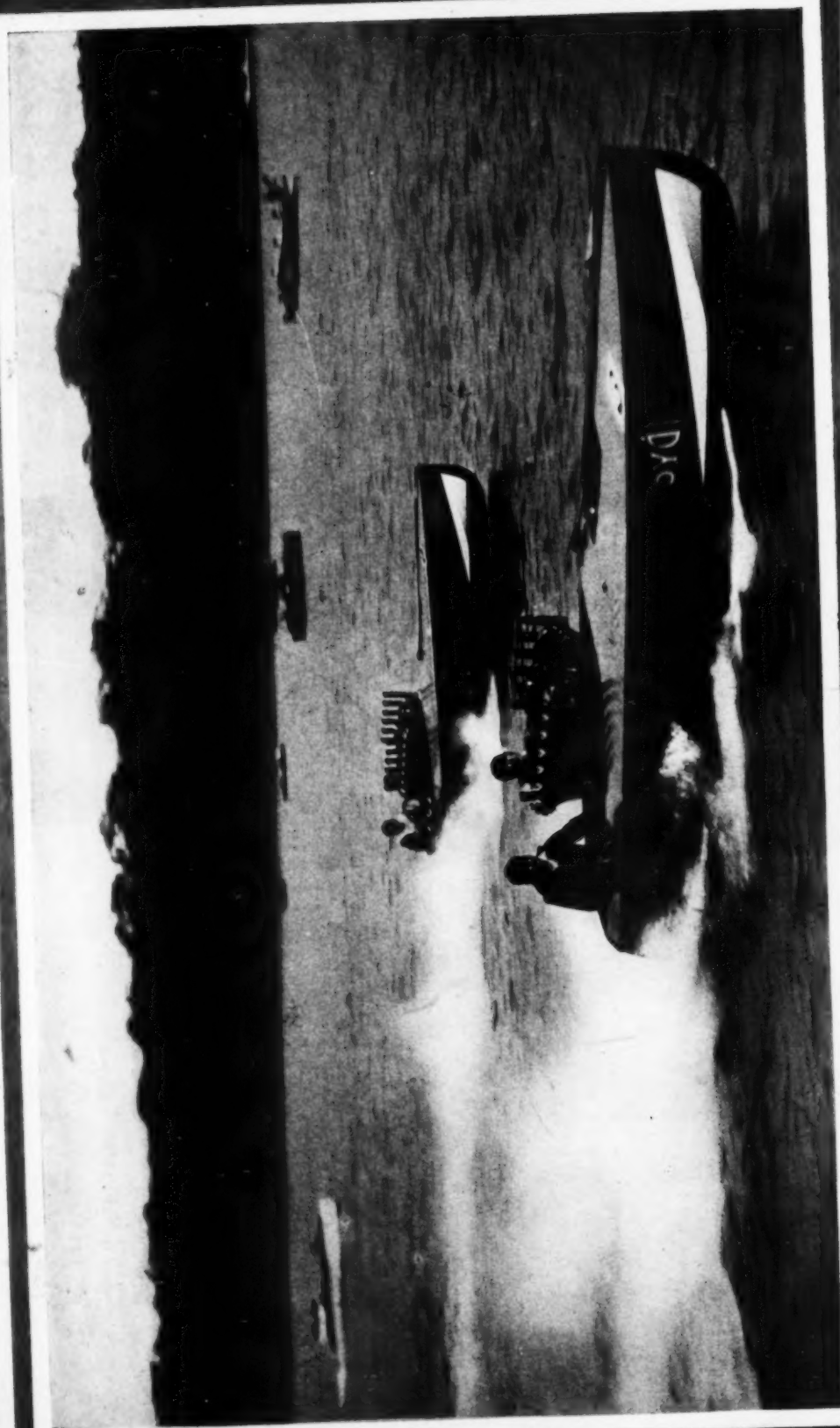


Chris. Smith, Mrs.
Wood, and Gar
Wood in the cock-
pit of Gar, Jr.,
going across
Lake St. Claire
at a speed of 35
m.p.h.



The Two Fastest Racing Hydroplanes in the World, Miss Detroit II and Miss Detroit III

Photograph Copyright by M. Rosenfeld



The illustration shows Miss Detroit III leading Miss Detroit II by less than one second. Each boat is powered with a twelve-cylinder 400 h.p. motor which gives them a speed of better than 60 m.p.h. The hulls are 20-footers designed and built by C. C. Smith, of Algonac, Mich.

Runabouts Defeat Hydroplanes in Toronto Races

Heldena II, Powered with a Van Blerck Motor, Wins the Toronto Free-for-All Against All Comers for the Canadian International Gold Challenge Trophy

expected to keep the trophy in Canada for the year to come. Hacker of Detroit, designed the hull which was a 26-footer similar to Eleventh Hour, which tried to race at Detroit. The hull was built by a local Toronto builder and was an excellent piece of workmanship. To be up to the minute in hydroplane practice, the Toronto people decided to power their craft with a twelve-cylinder Liberty motor, so they started negotiations with the Aircraft Board at Washington for the purchase of a Liberty. These finally were consummated and a check for about \$3,000. was sent to Washington in payment. Then the Government authorities suddenly woke up to the fact that Canada is not in the United States and the regulations forbid that a Liberty be taken out of the country, at least at the same price, so they returned the perfectly good check. After many weeks of dickering, they decided that about \$4,500. would be about right for a Liberty going to Canada and they so informed the Toronto racing enthusiasts, whose enthusiasm about that time was on the wane. But like good Canadians, they made out a new check for \$4,500. and sent it by messenger to Washington. After several weeks' more delay and complying with red tape, the check was



Heldena II, the winner of the Canadian International Gold Challenge Trophy. This boat is a displacement craft, powered with a Van Blerck motor, and she defeated two hydroplanes equipped with aviation engines.

Photographs by M. Rosenfeld

MARINE motors have met aviation engines and the former came out victorious. The displacement boat has met the hydroplane and by her consistency, the displacement craft brought home the bacon. This in a nutshell, is the story of the races for the Canadian International Gold Challenge Trophy Races held on Lake Ontario at Toronto, early in September. Never before have the two types of craft been entered together in a race of major importance. Similarly the regular stock marine power plant has had its first chance to demonstrate its superiority over the out and out aviation engine for boat use and the result of both comparisons is very gratifying and convincing.

The races at Toronto for the Canadian Trophy were on the same basis as the competition for the Gold Cup, that is, three heats of 30 statute miles each. Entered for this race were three hydroplanes, two of which were equipped with aviation motors and two displacement runabouts, powered with stock marine motors. The runabouts finished first and second. Of the aviation powered hydros, not one finished the complete series of three heats. Out of a possible 6 finishes, only once did a hydroplane cross the finish line. One of the hydroplanes partially burned, another sank, while the displacement craft reeled off mile after mile and lap after lap without the sign of trouble.

Of the boats entered, Miss Toronto was of chief interest as she was a syndicate built challenger, which was



The happy crew of Leopard I and III

The illustration shows Miss Detroit III leading Miss Detroit II by less than one second. Each boat is powered with a twelve-cylinder Liberty motor. The hulls are 20-footers designed and built by C. C. Smith, of Algonac, Mich. better than 60 m.p.h.



Miss Toronto, one of the few times which she ran at this year's Canadian races



Jack Bickell, of Toronto, driver of Miss Toronto, and the happiest and jolliest racing man at the meet in spite of the utter failure of his racing machine



Towing Miss Toronto in an effort to get the motor started. She was towed by a fast run-about and by throwing in the clutch the motor was finally made to fire after twenty-four hours of cranking had failed



*Leopard I,
powered with a
Sterling motor,
winner of second prize*

once more returned to the Canadians with the report that on account of the difference in value of the Canadian and United States dollar, the check for \$4,500. was not enough. About another \$500. was needed. So without a moment's delay, a check for about \$500. went to Washington to satisfy the powers that be.

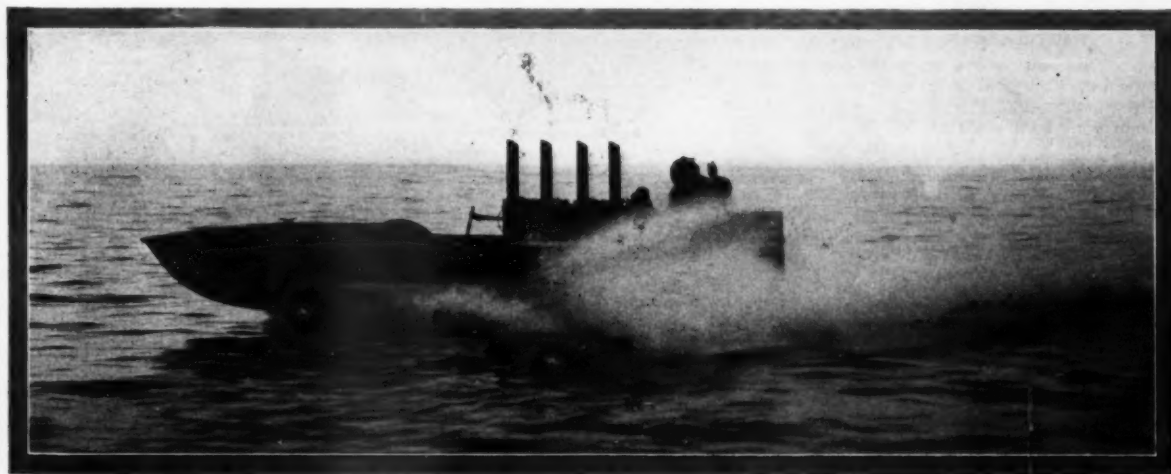
Finally the motor was shipped and got under way on its trip north. All went well until it arrived at the border line where once again red tape started, but this time the Canadian government was the instigator. They decided that it would be worth a duty of about 45 per cent. to have a few minutes' motor boat racing on Lake Ontario—perhaps, which meant the duty must be paid whether the engine ran or not. As later results will show, it ran mostly not. By adding the amount of this duty to the amount mentioned above, the reader can figure for himself what it costs to even get started to build a modern hydroplane. He can also draw his own conclusions as to why it is that hydro-

plane racing as practised today—is not more popular. As the result of all this delay, the motor did not reach the city of Toronto until a day or two before the races were scheduled to start. Consequently Miss Toronto did not have her first launching ceremonies until the afternoon of the first race.

With Miss Toronto all completed and launched, the troubles of her owners were not over. The next thing to do was to get the Liberty started. What good was their \$25,000 beauty unless she would run? For twenty-four hours steady, the various mechanics, racing enthusiasts and even members of the committee took turns at cranking. Occasionally, there would be a faint pop from one of the twelve cylinders and everyone took heart, but it was all short-lived and resulted in nothing. Every suggestion—and there seemed to be thousands—was listened to and tried with the same result. Finally, someone suggested towing Miss Toronto behind a speedy boat out on Lake Ontario. They figured that if they could get her up to a speed of 20 miles an hour or thereabouts, that with the clutch thrown in, the drag on the propellers would be sufficient to turn the motor over and that they could get her started in this way. The guess was correct, for Miss Toronto had been towed for hardly more than a mile when her exhausts began belching black smoke and we knew she was beginning to fire. As soon as the tow boat cast off, Miss Toronto's engines went dead again. However, the crew stuck at their apparently endless task and after towing the hydroplane for several hours with her motor firing most of the time, she gradually gained power and speed.

Another entry from which great things were expected was Arab IV, owned by Commodore R. H. Sidway, of Buffalo. This boat is powered with a Curtiss aviation motor and in the races on the St. Lawrence in August, showed speeds close to 60 miles an hour. However, hard luck followed this craft also, for after her appearance on Alexandria Bay, she was shipped back to Buffalo in a freight car and during transit, was stripped of every removable part. When she reached her owner at Buffalo, nothing was left but the hull and as much of the engine which could not be removed. Commodore Sidway set to work at once to put Arab IV back into shape but the time was not sufficient to allow him to complete his work in time to get to Toronto for the first race scheduled for September 2. He decided to run Arab IV across Lake Ontario from the Welland Canal under her own power, a distance of some 30 miles, across the open lake. Bad weather held him up again and so he did not reach the scene of the races until after the boats

(Continued on page 70)



Leopard III, formerly Peter Pan VIII, is powered with a Sterling motor and owned by Griffith B. Clark, of Toronto



Complete portable transmitting and receiving equipment in a handy chest. Weight 55 pounds

Man-Made Wireless Waves

Being a Description of the Possibilities of a Wireless Installation on Cruising Motor Boats, for Keeping in Touch with the World

By Walter J. Henry

Sales Manager, Wireless Specialty Apparatus Company

true. Refinements and progress of the last few years have produced radio communication equipment which is simple, compact, highly efficient and easy to operate. The engineers of the Wireless Specialty Apparatus Co., of Boston, Mass., have developed a small compact radio unit designed especially for use on motor boats and cruisers.

This outfit is built in two units, namely, a chest containing all the necessary transmitting and receiving equipment, and a small generator power unit. The transmitting chest measures only 17 x 15 x 10 inches so that even on boats where space is the most important factor, it can be tucked into some convenient corner. This outfit is also built to fit into convenient available spaces on the boat. For example, on yachts of the larger type, some owners like to have the radio apparatus built into a roll top desk. This is easily done and makes a convenient and neat looking installation.

Power for transmitting with this equipment is supplied by a small compact generator of the 500 cycle type and 250 watts output. This generator may be operated in three different ways. On boats that are equipped with an electrical or storage battery system capable of supplying about 1/4

KW of power in addition to what is necessary for lights, the generator is most conveniently driven by a small motor. In this case, the motor is built with the generator as a compact integral unit, occupying a space only 22 x 12 x 10 inches. For boats not equipped with an electrical system, the generator is designed for belt drive directly from the main power plant. A third alternative is provided in a line engine drive, usually found more to employ one of the

third alternative—small gas—though it is convenient foregoing methods.

THE waves in this case are not those of the well-known liquid construction which all motor boat enthusiasts admire, rebuke, and battle with on occasion, but rather are waves of a less tangible nature, invisible, without substance, yet vibrating with world mystery and romance. They travel in endless succession over the water, conveying news of war, of peace, shipwreck at sea, joys, and sorrows. They travel silently with the speed of light, these ether waves of the man-made wireless.

The average motor boat glides smoothly along, its occupants serenely unaware of these etheric disturbances, their potentialities and possibilities. Would you like to play with these fascinating waves and control them at your will, direct them, command them?

Would you like to talk with the far distant shore, or discuss matters with Charley Smith in his motor boat somewhere beyond his misty horizon?

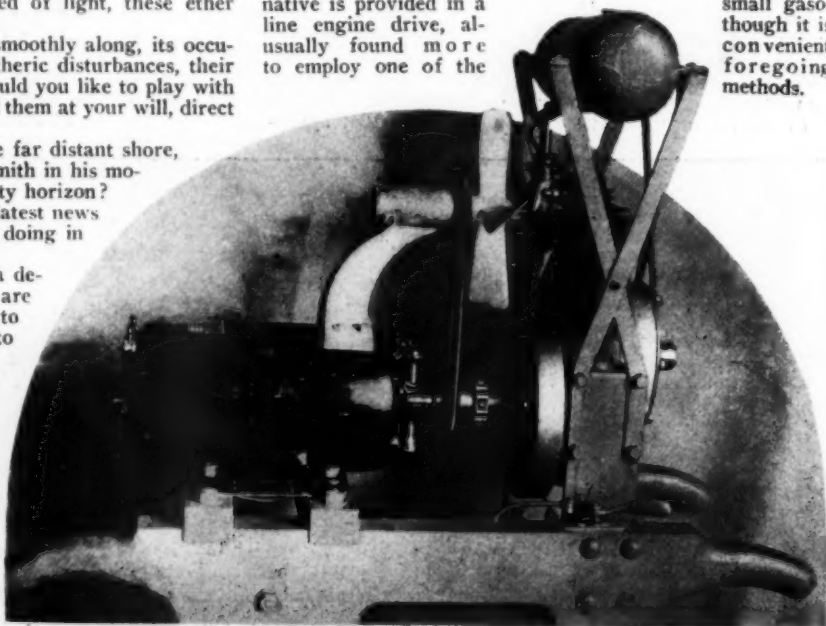
Or would you care to know the latest news of the hour, or what X Y & Q is doing in the market?

When your boat is enveloped in a depressing blanket of fog and you are hopelessly lost, wouldn't you like to know your position, accurate to within two degrees of arc?

Or when you encounter one of those unexpected breakdowns miles and miles from help, wouldn't you like to enlist immediate assistance instead of drifting aimlessly for listless hours?

If you would do these things, command the waves of the wireless!

With a good many motor boat owners, the word "wireless" is synonymous, with an elaborate, complicated, bulky, and expensive equipment. This is no longer



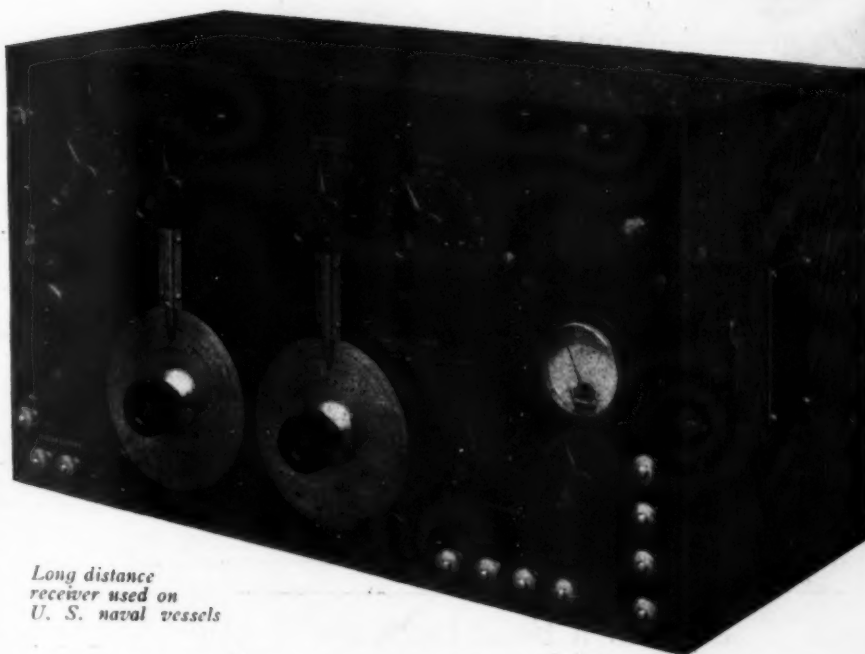
Direct connected motor generator set with air-cooled gasoline engine drive

It is only necessary to operate the generator unit during transmission as no power whatsoever is employed in receiving, and the equipment is normally adjusted for reception. While it is possible to transmit only radio telegraph signals with this equipment, both radio telegraph and radio telephone signals may be received with equal ease. With this apparatus, it is possible to transmit over distances up to fifty miles depending upon the size and height of the antenna, while reliable reception of signals is possible over distances up to several hundred miles. Some owners prefer a more sensitive type of receiving equipment which affords reception from European stations and has a practically unlimited range.

In radio telegraphy, it is necessary to have an antenna, which consists of one or more elevated wires, and a "ground." In land stations the "ground" is, of course, the earth. On large steamers, the "ground" is the steel hull which, of course, is electrically connected with the ocean, while on small motor boats, a good "ground" is provided by an electrical connection to the engine system which connect with the water through the screw.

A wide range of choice is permitted in antenna systems in making the antenna attractive and in conformance with the lines of the yacht. Other things being equal, radio efficiency is dependable on the height of the antenna, so that this should be made as high as possible without becoming unsightly and awkward. An antenna 18 or 20 feet above the water will give good results. This may consist of two, three, or four wires strung the length of the boat and supported by two short masts. If preferred, the arrangement used on the U. S. Submarine Chasers may be adopted. This consists of a high mast, centrally located, and two short masts at either end of the boat, supporting a four-wire antenna.

The installation of this outfit is extremely simple. All equipment for both sending and receiving is contained in



Long distance receiver used on U. S. naval vessels

the single chest. It is therefore only necessary to string the antenna, mount the generator, and connect the apparatus to antenna, "ground" and generator. It is then ready for immediate operation.

For those who wish only to "listen in" on news summaries, stock quotations, weather reports, storm warnings, etc., just a receiver alone is necessary. This unit is compact and attractive, and requires no power whatsoever for its operation. Both of these radio units combine, in the most desirable proportions, compactness, ruggedness, weather resisting qualities, and a high radio efficiency. They represent an attractive investment to the progressive boat owner who wishes to keep ahead of the times. Contrary to the usual belief, the cost of this equipment is very moderate. For the man who cruises, this equipment will enable keeping constantly in touch with the world, and for him, the radio is not a toy but a present-day actual necessity. Besides the invaluable assistance offered by the wireless, the fascinating joy of "listening in" or eavesdropping on the affairs of the world is a pleasure possible only to the owner of a wireless-equipped motor boat.

Bermuda to New York on the Winning Chaser

(Continued from page 9)

by notebook in hand to see that we didn't exceed 400, the engineers boosted her up to 375 and let her go west. The added twenty-five revolutions amounted to half a knot increase in boat speed, so that we were now making 11½ knots. (It would be more nautical but less accurate to say "logging 11½ knots," for the yacht type gadget trailing over our stern varied from 10 to 25 land miles an hour. It averaged up on a day's run, however, and was used in preference to our ship's log because of its lesser drag in the water.)

Shortly after noon of the seventeenth we intercepted a message from the tug Ontario to Leonidas which read: "Noon position 34-42 N. and 67-23 W. Leading chaser about 10 miles ahead; S.C. 129 last. S.C. 351 well to northward and out of sight." This was comforting news, as we knew ourselves to be the leading chaser, but we considered 351, commanded by Lieutenant W. W. Ball, a dark horse, and were a trifle worried over his taking such a northerly course. But Mr. Day had determined at the start not to be influenced by the performance of the others, and so we maintained our 11½ knots and hoped that 351 wasn't pulling anything that had been outside our calculations.

The next news by radio was a disappointment, for it related that at 4:30 P. M. 129 (whose captain, Lieutenant Maclear Jacoby, sunk a sub at Durazzo) had broken a crankshaft and was therefore eliminated from the race. Lieutenant Edmund Frederick, gas engine wizard for the Adriatic chasers, was aboard her as official umpire, and had the casualty been anything less than a broken shaft he could have doctored the 129 back into the running; but under the circumstances the race

was over for this chaser, and it only remained for her to do her best on two engines.

We were almost as sorry about the accident to S.C. 129 as we would have been over a similar failure to our own power plant, for the race as we figured it was less a contest among individuals than between groups—the Adriatic, represented by 129, 131, and 217, and the Plymouth chasers, or Bolsheviks, to which the 90, 224, and 351 belonged. S.C. 90 had once been a Jugo-Slav, but had volunteered for service against the Russians, and had thereby ranked herself as an undiluted Bolshevik. With Jacoby's boat out of the race it was more than ever up to us to win it.

At five in the afternoon we entered the Gulf Stream, observing the color of the water to change gradually to a deep blue, and were gratified to find that the current, flowing to northeast, practically nullified the effect of the brisk southwest wind on the water. Instead of a rough passage of the Stream we found the next 180 miles the smoothest portion of the run.

The early morning hours of the eighteenth were enlivened by our sighting ahead of us a strange ship whose lights seemed for a time to be those of a subchaser. There was first discernible the truck light, which identified the stranger as a naval vessel, and next the stern light, bobbing spasmodically out of sight according to the custom of a chaser stern light. Could 351, we wondered, have swung wide and come back on to the course ahead of us, or 90 dodged past us, running dark, only to light up again when she considered her lead a safe one? Whatever the possibilities, we were at least overhauling her rapidly.

At about 3:30 I was doing my best to bring down to the horizon Gamma Cassiopeia, the only heavenly body aside from a

(Continued on page 82)

SMALL MOTOR BOATS

Their Care, Construction, and Equipment

A Monthly Prize Contest Conducted by Motor Boatmen

Questions Submitted for December Prize Contest

1. Describe in detail some particular thing or things that you have done when going out of commission in the fall that has proven of value when going into commission in the spring.
Suggested by C. E. B., Fall River, Mass.

2. What procedure would you follow to continue running if the water circulating pump on your motor became disabled some distance off shore? Illustrate if possible.
Suggested by J. W. K., Jersey City, N. J.

3. Give your opinion of and illustrate the most desirable seating arrangement for a runabout approximately 25 feet long.
Suggested by W. B. M., Newburgh, N. Y.

Rules for the Prize Contest

ANSWERS to the above questions for the November issue addressed to the Editor of *MoToR BoAtInG*, 119 West 40th St., New York, must be (a) in our hands on or before October 25; (b) about 500 words long, (c) written on one side of the paper only, (d) accompanied by the senders' names and addresses.

The name will be withheld and initials used.
QUESTIONS for the next contest must reach us on or before October 25. The Editor reserves the right to make such changes and corrections in the accepted answers as he may deem necessary.

The prizes are: For each of the best answers to the questions below, any article or articles sold by an advertiser advertising in the current issue of *MoToR BoAtInG* of which the advertised price does not exceed \$25, or a credit of \$25 on any article which sells for more

than that amount. There are three prizes—one for each question—but a contestant need send in an answer to only one if he does not care to answer all.

For answers which we print that do not win a prize we pay space rates.

For each of the questions selected for use in the following month's contest, any article or articles sold by an advertiser advertising in this issue of *MoToR BoAtInG*, of which the advertised price does not exceed \$5, or a credit of \$5 on any article which sells for more than that amount.

All details connected with the ordering of the prizes selected by the winners must be handled by us. The winners should be particular to specify from which advertisers they desire to have their prizes ordered.

Should a Boat Be Kept in the Water All Winter

Reasons for and against Hauling Out a Motor Boat When Not in Use. The Majority of the Answers Advise Doing It

Answers to the Following Prize Questions Published in the August Issue

Suggest merits or demerits of keeping a boat in the water all winter instead of hauling out.

No Advantage by Leaving in Water

(The Prize-Winning Answer)

THERE is no advantage to be gained by leaving a pleasure boat in the water throughout the entire year, especially in the northern part of the country. From a financial standpoint there is no saving, as the cost of laying in a safe basin would about balance the charge for hauling out and storage. To lay in open water is to take a long chance.

During the winter a boat is kept best on the beach, well blocked and covered with canvas for protection from the weather. In addition, overhauling can be much more efficiently done on shore, and the bottom can be especially well taken care of if it has had a chance to dry out. This is important if much caulking and puttying is to be done. When the bottom is thoroughly dry it is much easier to discover dry rots in the planking, should there be any.

Even if a boat is allowed to remain overboard during the winter, it will be necessary to haul her up in the spring for overhauling. Most of the small marine yards are pretty well filled to capacity by that time and it is difficult to get a berth, as the early birds are thinking of launching then. When it is possible to find a yard that can accommodate the man who hauls out at this time, if he does his own overhauling he will have to rush it somewhat and, necessarily, important considerations will be overlooked.

If a boat is hauled out the middle or latter part of October, a goodly portion of the work can be done before the cold weather sets in. It is a comparatively easy job to scrape and clean the bottom then, and a priming coat of paint will leave it in good shape for the final coat before launching in the spring; the same also applies to the topsides, decks, etc.

There is also an element of danger in leaving the boat overboard during the winter, namely, that of freezing. While there are certain places that apparently never freeze, still there is the possibility of a winter such as that of 1917 and 1918. The writer recalls the case of a heavily built 40-foot sloop, with an oak bottom, which the owner left overboard year after year on the Jersey Flats, off Greenville. He contended that with her oak bottom she kept in better shape in the water than on shore, as he was relieved of the necessity of providing adequate covering to prevent "checking" of the bottom. In most years there is only a thin coat of ice over these Flats once or twice during the

entire winter, and ordinarily this would not affect a heavy boat. With the winter of 1917 and 1918, however, the ice reached a thickness of 15 inches, and maintained it for a period of nearly two months. As a consequence, when the thaw finally came, the ice pulled the putty and caulking cotton out of the bottom and several planks were also broken. The boat had to be hauled ashore in a sinking condition. The expense of putting her in proper shape was considerable, and it would have been far more economical to have hauled her ashore in the fall and provided the proper covering to protect her.

Everything considered, it is more satisfactory, to my way of thinking, to haul up for the winter period.

J. W. K., Jersey City, N. J.

Taking a Chance

CLIMATE is the one controlling factor in deciding whether a boat is to be hauled out for the winter or whether she will be kept afloat all year round. The proper care for a boat during the winter in Florida, would hardly be treating her right in Maine. In waters which do not freeze and the climate is such that the boat may be used all year round with comfort, by all means keep her in commission all the time. Where the water freezes even enough ice to support a dog it is inadvisable to leave the boat in the water. This one winter may be a severe one and enough ice may form to squeeze the hull, doing permanent damage.

If you are confident that no appreciable amount of ice will be formed and that your boat lays where the storms cannot reach her you are taking a safe chance on getting away with it all right.

Unless you wish to use the boat all year round there is no advantage or economy in wintering in. The difference in storage charges will be consumed by the extra work necessary to put the boat in shape in the spring. It will be necessary to haul out in order to scrape and paint the bottom and the job of removing the accumulation of marine growth and getting the bottom in condition to paint, will be twice as hard and more paint will be required.

You know how hard it is to keep the top sides nice and white during the summer, and if you skip the weekly scrubbing and slicking up the work is doubled. Now multiply this by the number of weeks the boat is laid up and you will have a fair average of the time required to scrape down, scrub off, and repaint the top sides and do it right. You

must repaint every spring anyway but—can you protect the sides from the weather while the boat is in the water? Hardly.

Suppose she should spring a leak. The yard man would keep her afloat while notifying you and send in his bill which you should pay smilingly. Then the boat would have to be hauled out and caulked, and you would very likely order her kept on shore for the remainder of the season.

Wintered in everything will get damp and sticky. It is impossible to keep the bilge absolutely dry and the moisture from the air will accumulate on the finish, motor, and equipment. The finish will lose its luster, the motor unless well greased will rust and much of the equipment will mildew. The boat will be hauled out for repainting in the spring anyway so as one of the signs on the billboard says "Eventually! Why not now?"

A boat which is wintered on shore properly blocked up and covered will be in prime condition for painting with but little preparation. The wood will be thoroughly dry; still the hull will not dry out enough to open the seams any appreciable amount. A little ventilation under the cover will keep the inside dry and sweet. The bright work will remain bright and the motor if given any attention at all on laying up will stay just as it was left.

There are generally several nice spring days before fitting out time when the spirit gets you and you just naturally wander around the boat to look things over. This is the time to open up and overhaul the motor and make any interior repairs or alterations you may think necessary. You will get at fitting out earlier in the season and you will not

have to await your chance at the marine railway for a few days and then hurry the job so as to let someone else on.

W. B. M., Newburgh, N. Y.

Sensible Reasons for Hauling Out

I THINK that all small craft should be hauled out for the winter because of the following reasons:

1. When the boat is standing idle, ship worms or teredoos get in their work, causing leaks that are hard to locate and often costly to repair.
2. On account of the general wear and tear on equipment, such as the mooring lines, awnings, rigging, etc.
3. Because of the rapid deterioration in salt water of the rudder and shoe fittings, if they are of iron construction.
4. In the winter the boat is in danger of being damaged by ice if anchored in a river or fresh water lake, unless protected on the upstream side by piling.
5. Because of the constant care and trouble in looking after the boat in a busy season, and the liability to neglect by not having the time to visit her occasionally to see if everything is all right. Also the trouble in keeping the riding lights lighted at night if the boat is anchored near a channel or in a harbor.

Even if you have the time to keep her under your eye it will pay in the long run to have the boat hauled out and stored in a dry, safe place. The cost for new equipment in the spring following a winter in the open will be a great deal more than the storage fee and the usual outfitting.

N. M. J., Sarasota, Fla.

Important Improvements in Hulls and Power Plants

What the Experiences of a Year or More Afloat Has Taught—
Plans for Next Season Already Being Formulated

Answers to the Following Prize Question Published in the August Issue
Describe and illustrate what you believe is the most important change, addition or improvement you have made on your craft this season, giving your reasons for making them.

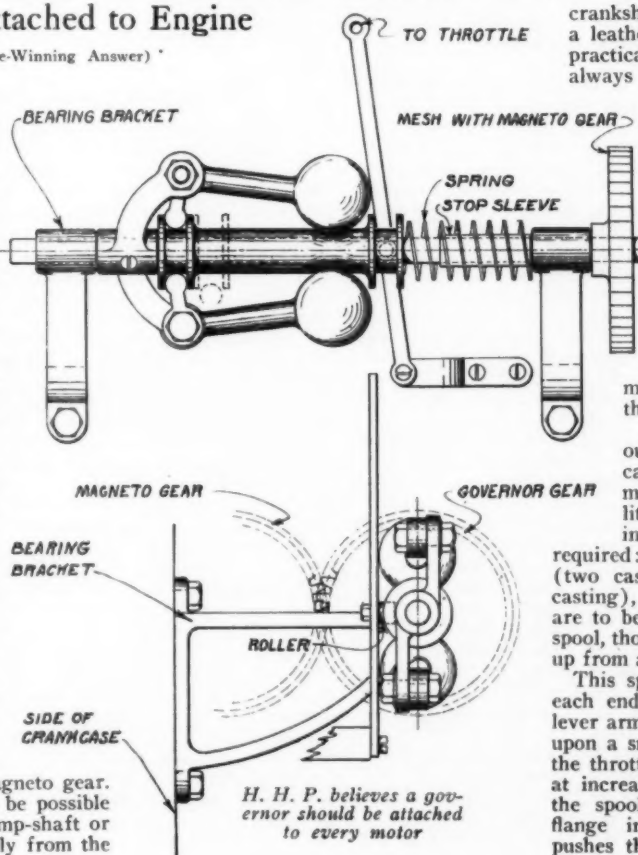
Governor Attached to Engine

(The Prize-Winning Answer)

THE most important addition and improvement that I ever made on my 28-foot cruiser was a home-made governor attached to the heavy-duty, 10 h.p., two-cylinder, four-cycle engine, constructed similar to that shown in the sketch.

No dimensions are given, for the size would vary in each case, according to the size and type of the engine. In this case the only possible drive for the governor was off the magneto gear, the magneto being attached to the starboard side of the engine (the same side as the throttle, fortunately) and gear driven off the camshaft. So the governor shaft was installed horizontally, running in two brass bearing brackets bolted to the crankcase and extending out far enough to allow the governor gear to mesh with the magneto gear.

In other cases it might be possible to drive off a cam- or pump-shaft or the timing shaft or possibly from the



crankshaft itself and in many cases a leather belt drive would be more practicable than gears. As there is always danger of such a belt breaking, the engine should not be left running when the boat is at the dock when no one is on board, without closing the throttle, for if the belt broke the engine would race and damage might result.

This governor was driven at about engine speed, 350 r.p.m., but the higher the speed the lighter the balls may be made and the more sensitive the governor.

All the patterns were cut out of soft wood, by hand, and cast at a brass foundry. The machine work amounts to very little, as it is principally drilling. Four wood patterns are required: one of the ball and its lever (two castings off), one yoke (one casting), one bracket, if both brackets are to be the same, and one for the spool, though the latter may be turned up from a length of brass shaft.

This spool has a set of flanges at each end, in one of which the ball lever arms work and the other works upon a small brass roller screwed to the throttle lever. As the balls open at increased speed their levers push the spool along the shaft and the flange in contact with the roller pushes this along also, thus moving

thus moving the lever which is connected to the throttle on the intake manifold or the carburetor, closing the throttle and slowing down the motor; whereupon the balls start to close together again and open the throttle.

A brass sleeve on the shaft, within the coil spring, acts as a stop on the balls and takes the strain off the throttle lever.

Some experimenting is necessary to find the proper size and length of the spring, amount to allow the throttle to close, and other adjustments in order to have the governor work smoothly and not cause too much surging.

In regard to the reason for making this improvement and the advantages derived from it: the installation of this governor was found to increase to a very great degree the ease of control of the boat, for in making a landing it was not necessary to keep continually adjusting the spark and throttle levers. These were never touched and both hands were left free, one to work the wheel and the other the clutch lever. The throttle could be left wide open but the engine never raced nor stalled, though the clutch and reverse could be quickly engaged and disengaged continually. (not to say, however, that this is good practice). Then there is no danger of a greenhorn pulling back the clutch lever "to see how it works" and letting the engine do its best to burst its flywheel before somebody else can throttle down; furthermore, when in a tight place where a stalled engine spells trouble it is a great advantage not to have to worry about throttling down too far before throwing the clutch in while maneuvering.

H. H. P., Oakland, Cal.

A General Overhauling the Most Important

GIVEN a good boat well found and cared for, it would be hard to select any one point that has been altered or improved and call it the most important improvement of the season so we will assume a boat sadly neglected and out of repair and proceed to put her in first-class trim and running order.

Starting with the hull we find many coats of miscellaneous brands of paint; some good, bad and indifferent, all cracked and peeling off in spots. We will remove all this old paint and apply three coats of a standard brand yacht white and stick to this brand. The same applies to bottom paint as well.

The varnish on the interior woodwork has lost its gloss and in some places the wood has darkened from exposure, the finish being worn off. Instead of attempting to revive the varnish and apply another coat or two, we will scrub it down with a solution of soda and ammonia and apply two coats of flat white and a coat of interior gloss white which will lighten up the interior, making a more cheerful cabin and the finish will last several seasons.

The bilge has been neglected and contains a miscellaneous collection of several seasons' grease and old paint. This we will clean and scrape and open up the limber holes, or if no limber holes are provided we will bore them and run a brass chain through the holes so that by pulling the chain back and forth we can remove any dirt which may collect. After cleaning the bilge instead of painting it we will apply a liberal coat of carbinoleum, creosote or any of the preparations for preserving wood.

On both bows there is a name and directly under it a number. We will remove the name and add an inch or two to the height of three inches required by law, and have the name and hailing port on the stern only.

Our steering gear is a collection of tiller, pulley blocks, rope and clamps, and the only way we can get at it is to do the contortionist's act and crawl through the locker under the after deck. Believing that it is better to be safe than sorry, we will remove this mess and use a quadrant instead of tiller and side pulleys instead of blocks. We will cut a hatch in the locker and bulkhead so that the steering gear is easily accessible. Directly over the rudder post, which we will square up to take an emergency tiller, we will fit a removable screw top deck plate and the tiller will be kept in the cockpit on hooks at all times.

Anyone who has had their steering gear go bad in heavy weather will realize the value of this arrangement.

The old companionway slide leaks and sticks and has been cussed out nearly as much as the motor. We will do away with this one and construct a slide after one of the

designs shown in past issues of MoTOR BOATING.

While we were on our cruise some of the party ventured to sleep on the so-called bunks in the cabin and woke up under the other fellow on the floor after the night boats had gone by. The Prize Contest has shown designs for several good folding berths and we will build a couple in the boat at our earliest convenience, and next season we will sleep.

The motor is a fine stove and keeps the cabin at 90 degrees or better all summer and would be a fine place in winter but to keep the cabin cool and comfortable we will install a cowl ventilator on deck and air scoops at the ports so that there will be a circulation of fresh air to keep down the temperature.

The power plant was an old two-cylinder two-cycle make and break motor. This was a good old engine and did its duty for years without kicking very much because the skipper was also a good engineer. We are getting things up to date now so we will install a new power plant. This will be a two-cylinder four-cycle motor of about the same power, turning at 400 r.p.m., and we can expect a slight increase of speed and a marked decrease in fuel consumption.

The old motor was under the cockpit floor where it was never touched except when necessary. We are installing a new engine bed to bring the motor just inside the cabin where it is accessible on all sides and will be taken care of.

Many a stormy night the deck hand has nearly gone overboard while trying to relight the running lights and the engineer's lantern lost its globe in contact with a stanchion. We are installing a dynamo and storage battery and a complete electric lighting system which is controlled from a switchboard in the cabin. The oil lights, cleaned and filled, will be put away in a locker for an emergency and we will use new waterproof electric running lights.

The above are only a few of the worth-while changes and improvements which we have made. We dare not venture an opinion as to which one is the most important. The skipper says it is the trouble-proof steering gear. The engineer favors the motor, the mate the waterproof companionway; the deck hand is undecided between the new running lights and the extension berths and the ladies (here's to their health) like the white cabin interior, so what's the use.

W. B. M., Newburgh, N. Y.

Three Decided Improvements

THE three most important improvements that I have made on my motor boat this year are the following:

First, the electric wiring. When I purchased my boat the wiring was all out of No. 16, burning the lamps from a 6-volt storage battery. The result was that after lighting one or two lights, there was a drop in the voltage which was very noticeable, and the lights burned very dimly. I took out all of this wire and replaced the main line with No. 12 and the branches with No. 14. Also replaced the 6-volt battery with an 8-volt type, running the 6- to 8-volt lamps off of same, and found that there was no noticeable change in the lights no matter how many of them are turned on.

The second improvement was the screening of the main cabin and galley. No matter where we would be when we started to cook or eat, there would be flies around. Now the flies are conspicuous by their absence.

The third improvement made was on the bridge deck of this 40-foot cruiser. In steering from the bridge deck it is very pleasant in good weather, but in bad weather it is very uncomfortable. I enclosed this bridge deck entirely with glass, making it a pilot house. By doing this, in clear weather we can leave all the windows and the two doors open, which makes it almost as open as a bridge deck. In bad weather it is very snug to have it entirely enclosed. Another advantage derived is having the running lights high up, also the search light. I have installed the switch board on the after bulkhead so it is readily accessible and always in sight. I also had a large seat, 7 feet long, put on the after end of this cabin, and can sleep two additional people in the pilot house.

These changes while not amounting to a great deal, I find, make motor boating considerably more pleasant than before.

C. G., Baltimore, Md.

What Does It Cost?

MoToR Boating Readers Tell Where the Money Goes in the Maintenance and Operation of a Motor Boat—Remarkable Examples of the Enjoyment of Boating at a Relatively Small Cost

Answers to the following Prize Question Published in the August Issue

Give some figures as to the cost of operating a particular type of motor boat, including storage and general upkeep, so that one not familiar with the sport can determine what he must expect to pay.

\$136 a Year

(The Prize-Winning Answer.)

ASSUMING that the new owner is interested in a craft of say 25 feet to 30 feet overall length and desires to know approximately the general upkeep costs, the following briefs from the records of one boatman who has maintained

such a craft, using same consistently for ordinary week-end runs and also on vacation and holiday cruising, for several seasons past, are worthy of consideration.

With the beginning of April the fitting out season is at hand and the first requirements in order to begin the boating season properly are the paint and varnish supplies. These together with other necessary items and incidentals that go along with same amount to about \$10.

By the end of April the fitting out is completed and the craft, all spick and span, is put over. With the boat safely afloat and the power plant connection all in order the replenishing of essential articles and supplies is taken up. Such things as the replacing of old or worn rope, ignition batteries and other various accessories are recorded as costing in the neighborhood of \$14.

Not until the latter part of May and the beginning of June are the running expenses hardly noticed, however, from then on until the closing of the season at the end of September the outlay, of course, barring serious accidents, is principally for fuel supply and provisions. Of course, the amount of these most important items will vary considerably with different owners and different types of power plant but for ordinary run of cases the figures as

furnished will not be far from amounting to \$60.

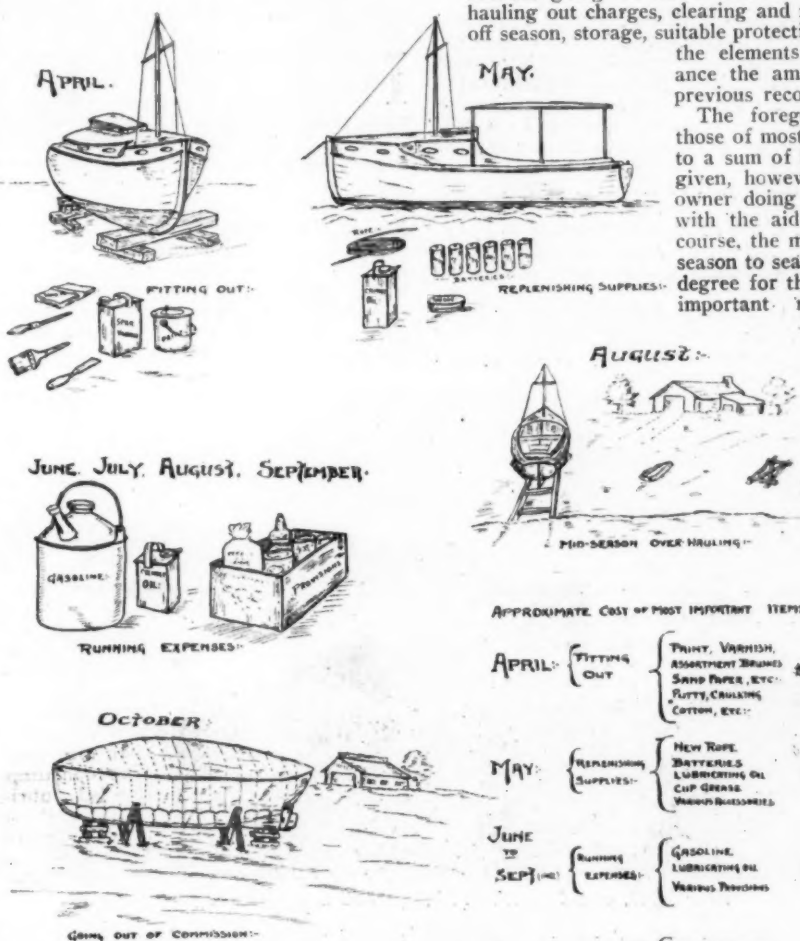
Generally motor boatmen plan to take their vacation cruise in August and as a rule they like to get away with the boat all slicked up after a thorough overhauling. For the mid-season overhauling the entered amount is close to \$7.

With the approach of October but actually depending just when, upon the weather the season draws to a close and the going out of commission is in order. For the hauling out charges, clearing and making ready for the off season, storage, suitable protection and covering from the elements and also for insurance the amount as indicated by previous records is close to \$45.

The foregoing items represent those of most importance and total to a sum of \$136. The figures as given, however, are based on the owner doing the work himself or with the aid of his friends. Of course, the maintenance cost from season to season will vary to some degree for the reason that various important necessary items of

equipment will not have to be added to or replaced every season. For instance, a canvas cover, for protection in the off season would amount to considerable in the first cost but would do for a number of seasons with a small amount of attention and this fact holds good with various other articles of equipment.

The accompanying chart sketch will readily make clear the foregoing brief enumerations, and for the real pleasure, sport and benefit derived from the amount expended, the investment is most certainly to be considered



Illustrating where the money goes. See C. E. B.'s figures

APPROXIMATE COST OF MOST IMPORTANT ITEMS:

APRIL	FITTING OUT	PAINT, VARNISH, ROCKETTY BRUSHES, SAND PAPER, ETC., PUTTY, CAULKING, COTTON, ETC.	\$10.00
MAY	REPLENISHING SUPPLIES	NEW ROPE, BATTERIES, LUBRICATING OIL, CUP GREASE, VARIOUS ACCESSORIES	14.00
JUNE TO SEPTEMBER	RUNNING EXPENSES	GASOLINE, LUBRICATING OIL, VARIOUS PROVISIONS	60.00
AUGUST	MID-SEASON OVER HAULING	PAINT, VARNISH, SAND PAPER, PUTTY, STEEL WIRE, ETC.	7.00
OCTOBER	GOING OUT OF COMMISSION	HAULING OUT, STORAGE, COVERING, INSURANCE	45.00
AMOUNT			\$136.00

ed a very profitable one.

C. E. B., Fall River, Mass.

[While the figures and tabulation as given above are correct, it will be advisable for the newcomer in motor boating to bear in mind that in common with everything else the cost of all necessities for the boatman have risen also.—EDITOR.]

Where Could Real Enjoyment Be Had So Cheaply?

THE good ship Edna M II shown in the accompanying photograph is a 27x8-foot cruiser, rather beamy, but a staunch comfortable cruiser with accommodations for extended cruising for a party of four, or day cruising for a party of six to eight persons. Records have been accurately kept of the cost of storage, upkeep, and operating expenses and as the boat is of a size and type that I believe will appeal to a majority of water lovers, these records should be of value in giving an idea of what one may expect to pay as an owner.

Expenses group themselves into four headings, as follows:

1. Operating, gasoline, oil, batteries.
2. Upkeep, repairs, and replacements to motor, hull, canvas, curtains, awning, anchor rope, etc.
3. Storage, summer anchorage and laying up for winter.
4. Taxes.

The operating expenses will depend largely upon how much the boat is used, of course. The boat has been run during May, June, and July some 500 miles and her motor, a 16 h.p., four-cycle, four-cylinder Kermath, which turns at 700 r.p.m., drives her a good 8 miles an hour, consuming about one gallon to 4 miles running. She has been used practically every Saturday afternoon and all day Sunday during the three months mentioned and made a two weeks' vacation trip from Philadelphia to Reading, Pa., in which some 130 miles were covered. The total amount of gasoline used was 125 gallons, which at 27 cents amounts to \$33.75 for the three months. A little over \$11 per month.

The lubricating oil consumed has averaged one gallon per month at 65 cents.

There is a self-charging storage battery-generator lighting system of Henrick's Magneto Company's make installed and there have been no repairs necessary to this system during three seasons' operation. The battery has been recharged twice each winter to keep it in condition. Charging has been \$2 per winter. It is automatically kept charged during the summer running, incurring no expense.

Upkeep: As all repairs have been attended to by the owner, a minimum of expenses has been incurred in the three seasons' use. There have been no repairs or replacements necessary to both hull and motor, excepting a slight caulking of seams in the winter involving practically no expense, and a new set of spark plugs costing \$4.

Two coats of paint in the spring time applied to the outside work, and a coat of varnish on the interior woodwork consumes:

One-half gallon white enamel.....	\$3.00
One-half gallon black enamel.....	2.50
One gallon deck and cockpit paint.....	3.50
One-half gallon copper bottom paint.....	3.00

Total \$12.00

The canvas awning and side curtains last just three seasons and cost \$45 to replace. The cockpit is 12 feet long and an average of 7 feet wide.

Anchor lines last three years and cost \$10 at present prices to replace. These include 150 feet 3/4-inch manila

and 50 feet 1/2-inch line for light anchoring or making fast to a wharf.

Winter storage costs, in Philadelphia, seventy-five cents per foot, and scrubbing off bottom of boat when hauled out \$2.50 more. The latter item should not be dispensed with for it will repay itself in time and labor saved in the spring. Thus winter storage is \$20.25.

Summer anchorage varies in different localities and with the amount of attention required. This in many cases may not be necessary but where an anchor light is necessary to be hung every night and the boat watched over in a general way, at least \$2.50 per month may be figured as a certainty.

Membership in many clubs affords this attention free of cost other than dues.

Government taxes amount to \$10 per year, which we all hope will soon be reduced or eliminated entirely.

W. E. M., Philadelphia, Pa.

Costs for an 18-Footer

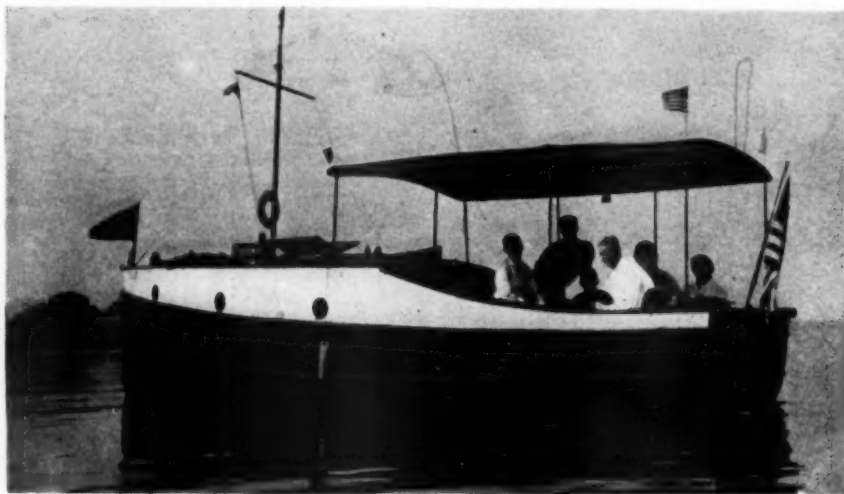
IN the vicinity of New York City the small raised-deck cruiser seems to be in the majority; but taking the country as a whole, the common open or family boat seems to be the most popular. As my boat is of that type, it will probably be interesting to a great number of people, to know exactly how much she has cost to be run and kept.

The boat is an 18-foot 4-inch by 4-foot 4-inch round-bottomed, transom-sterned hull. The construction is fairly heavy. The engine is a two-cycle, single-cylinder, 2-port machine operating at 400 r.p.m. Her speed, carefully checked over an official course, averages 7.954 miles an hour. My gasoline consumption is 1.41 pints per horsepower-hour, or 5.64 pints per hour at practically an 8-mile speed. This is about 7/10 pint per mile. At twenty-eight cents per gallon this amounts to less than two and one-half cents per mile.

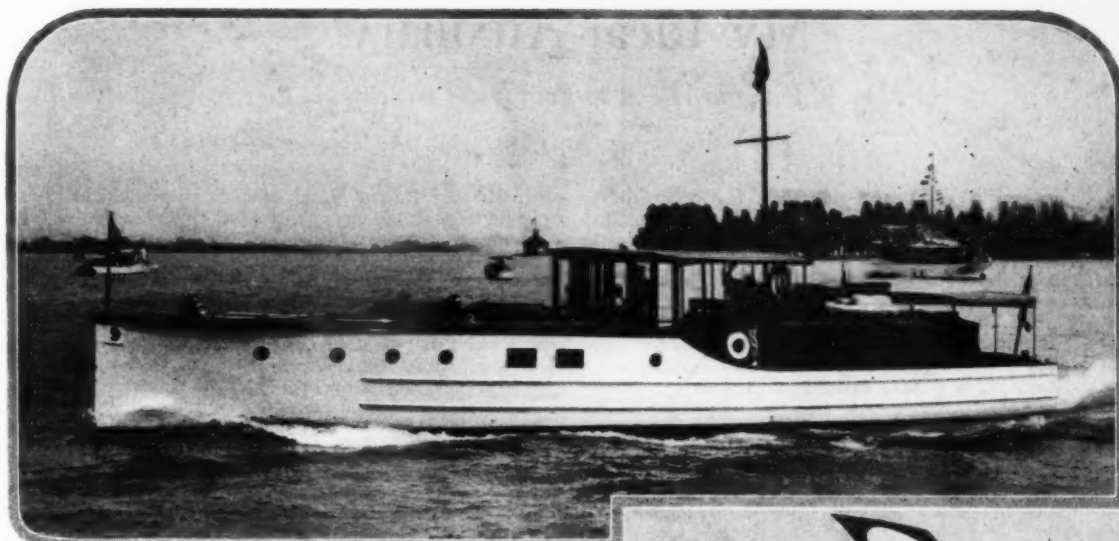
As my invariable crew is two besides myself, it can be seen that the fuel cost per mile per person is less than one cent. The consumption of lubricating oil is .0175 pint per mile, which at \$1 per gallon is 21/100 of a cent per mile. Calling it one-quarter cent per mile, we find a total fuel cost of two and three-fourth cents per mile. Taking the average of three years' mileage, I find that 1,800 miles per season is fair for this class of boat. This would figure out at \$35.75 for gas, grease, and oil per season.

As my engine has a low-tension magneto, one set of six dry cells last me all season. Cost \$1.80. Kerosene for running lights is about two gallons per season. At fitting out time I use about \$13 worth of paint, varnish, sandpaper, and putty. My hauling, summer mooring and winter storage is a flat rate of \$25 per year. Every year I put about 10 pounds of new anchor line aboard, which costs at the present time about \$4. New spark points and spring for the ignitor cost \$1.50. Depreciation at ten per cent. on first cost of \$450 should also be considered. A new suit of flags are also necessary on occasion and amount to about \$3 per year. Summing everything up I find that my total mileage for the season was 1,272 at a total cost of \$132.41 or .104 per boat mile.

W. C. T., New York City.



Edna M II, owned by W. E. M., operated at a very low yearly cost



Silver Heels, the 63-foot cruiser owned by Commodore Schantz, powered with an eight-cylinder Van Blerck motor

Silver Heels II Wins Consistency Race

Commodore Schantz's Cruiser Wins 30-Mile 3-Heat Race at Detroit with Handicaps Based Upon A.P.B.A. Rules and Actual Performances

SUMMARY OF RESULTS OF CRUISER RACE

Three heats of 10 miles each. Handicaps in first heat based upon A. P. B. A. Rules; in second heat upon fastest lap in first heat, and allowance in third heat figured on fastest lap in first two heats.

Name of Boat	Owner	Time 1st Heat	Time 2nd Heat	Time 3rd Heat	Points
Silver Heels	A. A. Schantz	49-13	48-16	46-01	26
Josephine	E. H. Scott	1-01-50	1-01-56	1-00-55	24
Betty Jane	C. D. Cutting	42-03	41-56	38-47	22
Arlah	H. E. Schermerhorn	1-18-24	1-15-09	1-12-02	21
Mauval	G. F. Volkner	1-09-12	1-10-03	1-08-06	18
Pirate	T. C. Merrill	1-05-01	1-11-17	D.N.S.	14
Lillie Vesta		1-19-07	1-07-07	1-07-19	12
Awandra	J. J. Miller	1-13-14	1-30-37	1-16-41	10
Valoria	M. Stotter	1-03-14	D.N.F.	D.N.S.	6
Miss Grose Pointe	R. G. Marsh	1-18-48	D.N.S.	D.N.S.	1

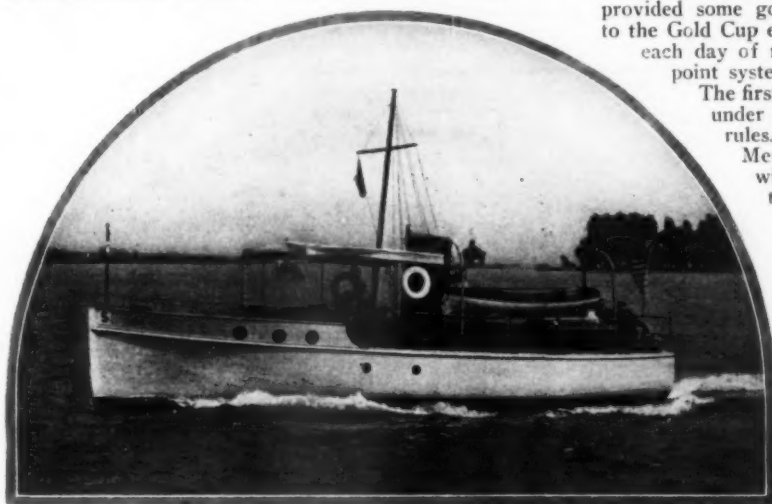


W. D. Edenburn, one of the hardest and most efficient workers on the Detroit Committee in the act of starting one of the Cruisers

THE race of cabin cruisers for the Sallan Trophy was one of the events of the regatta at Detroit. A 10-mile race four times around the $2\frac{1}{2}$ -mile Gold Cup Course provided some good racing with close finishes. Similar to the Gold Cup event this was run in three heats, one on each day of racing, the winner to be decided by the point system.

The first day ten competitors started, handicapped under 1919 American Power-Boat Association rules. The limit boat Pirate, owned by T. C. Merrill was never passed and finished first with Betty Jane I a close second. The third and fourth places were taken by Commodore Schantz's Silver Heels II and Max Stotter's Valoria respectively. On the second day the handicaps had been recomputed according to the previous days' performances resulting in a very close finish. Five of the boats finished within the same minute. Silver Heels first, and Josephine, Arlah, Mauval, and Lillie Vesta in close succession in the order named.

At the end of the second day the point score was peculiar in that the six leading contestants had the same score in pairs. Silver Heels and Josephine 17 points each; Pirate and Valoria 14 points each; Arlah and (Continued on page 80)



Josephine, owned by Vice Commodore E. H. Scott, of the Erie Yacht Club, the cruiser which finished second

My Ideal Auxiliary

No. 9, Penguin II—A 29-Foot Yawl with 10 H. P.

By Edwin W. Kendrick

PENGUIN II is the result of adding, in the smallest area, those features which may be found lacking in "White Cap, my little auxiliary sloop. Namely, this boat has full headroom, more closet space, and a little more room to move about in; both in the cabin and on deck. The added space in the cabin will be most appreciated by the cook as it offers him every facility in his galley and at the same time leaves opportunity for some other worthy and willing member of the crew to get the dishes from their places and set a table without butting in on that aforesaid worthy potentate.

Here have we gained in a craft only $2\frac{1}{2}$ feet longer than her predecessor; headroom, closet space, more space, and the desirability of changing the rig from sloop to yawl. Of course the piper must be paid and here are the costs. The headroom necessitates a greater draft, 14 inches more, and that has meant 2,100 pounds more ballast to carry around. It is a combination, however, that should tend to make Penguin II a very comfortable sea boat with a better hold on the water, and therefore better weatherly qualities.

The increased area to accommodate the hanging lockers, the value of which is known best to those who do extensive cruising or living aboard, and increased space generally in the cabin has required a fuller bodied boat, and the whole combination has let us in for double the sail area and double the engine power, with proportionate construction costs. Thus do we pay the piper for these little conveniences. Yet are we willing? I should say, "Yes."

To take care of the increased said area we have usually turned to the yawl rig, which for its ship-piness, its sense of security and ease of security, has been written of so often that I need do no more than acclaim myself another of its humble but ardent admirers. That is for

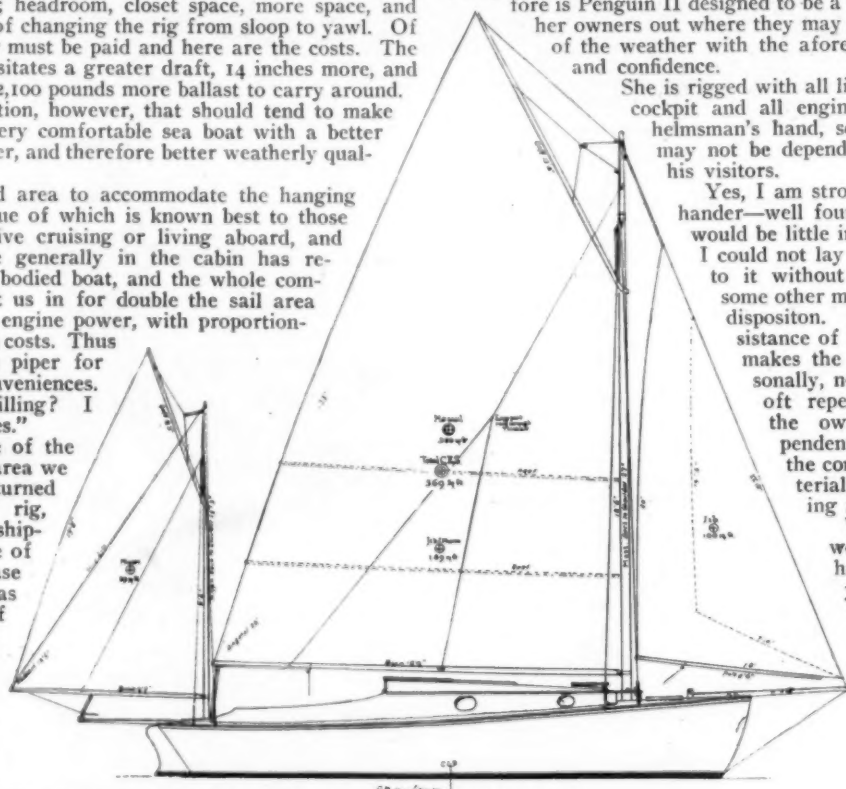
craft whereof the sail area is such that it should be divided to be handled in the emergency case by one man.

To me, no feature of a boat is more important than ease of handling, the assurance that, no matter what weather comes along, you can trust yourself and your little ship to carry on and go through with that sense of exhilaration and joy which must remain forever unknown to the man with a craft that says, in a breeze, another puff just a little more severe than the last may cause me to capsize, or in a following sea, when the hungry whitecaps break around the counter, that each is just the precursor of the one that's going rolling along the deck to swamp the cockpit. Therefore is Penguin II designed to be a boat that will take her owners out where they may meet the vagaries of the weather with the aforesaid sense of joy and confidence.

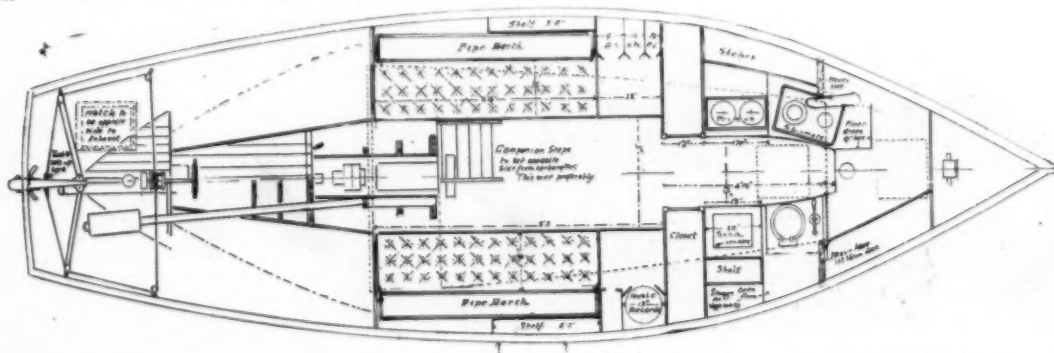
She is rigged with all lines leading to the cockpit and all engine controls at the helmsman's hand, so that her owner may not be dependent on help from his visitors.

Yes, I am strong for the single-hander—well found. To me, there would be little in having a boat if I could not lay out a trip and go to it without considering first some other man's inclination or disposition. Certainly, the assistance of sailing mates half makes the game, but I personally, never could see the oft repeated situation of the owner entirely dependent on the crew; if the company did not materialize, stay at mooring all day.

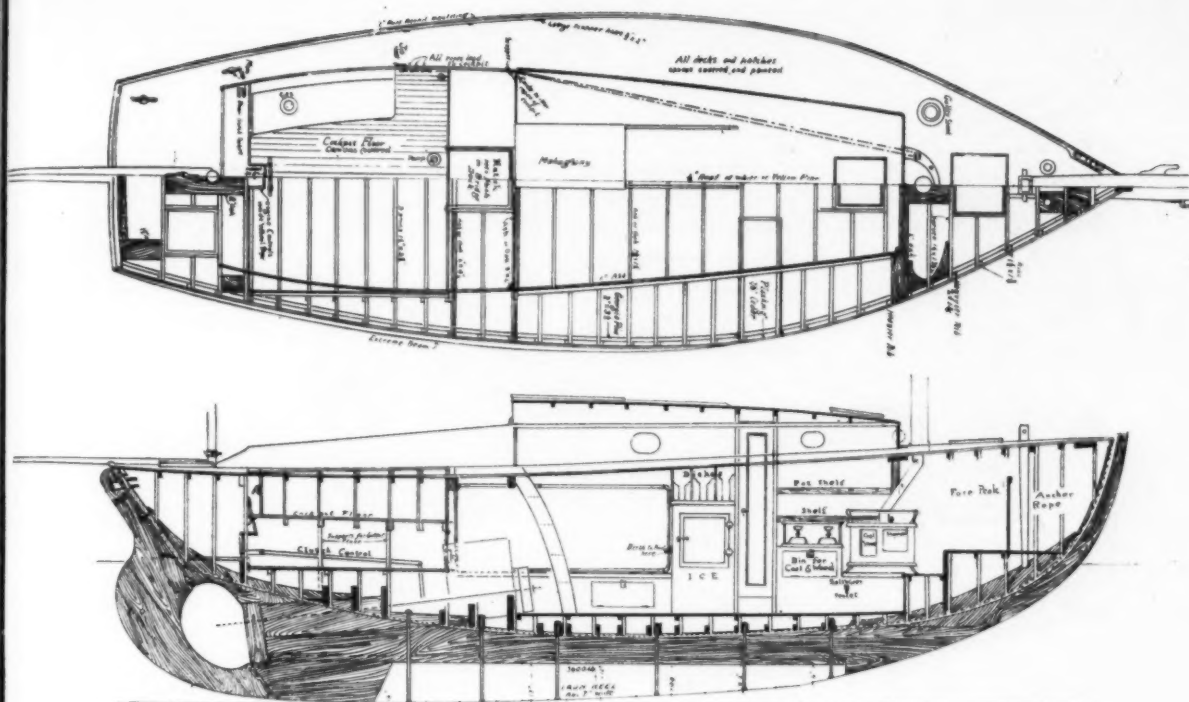
With these few words on the single-hander, and the yawl rig, and whether certain elements offset their cost, features that must always enter into the designing of ideal craft to meet our ut-



* The plans of White Cap were published in the Ideal Cruiser competition, MoToR Boating, April, 1917. The story of one of her cruises from New England to New York was published in MoToR Boating, January, 1918, and a photo of her appeared in MoToR Boating, January, 1919, page 18.



Outboard view of Penguin II. Scale $\frac{1}{8}$ inch = 1 foot. Layout of interior. Scale $\frac{7}{32}$ inch = 1 foot



One-half framing and one-half deck plan. Longitudinal section showing framing scale 7/32 inch = 1 foot

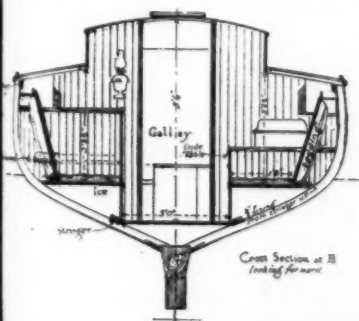
most desires and the peculiarities of our own special cases, we will turn our attention to the various plans of Penguin II.

Note the semblance in her sheer to White Cap, the product of George Chaisson, a builder of craft for New England fishermen. If we sailed a 350-mile trip down the coast with comfort in Penguin II's predecessor, I certainly think we should be able to do similar extended cruises in this boat. And with still more comfort.

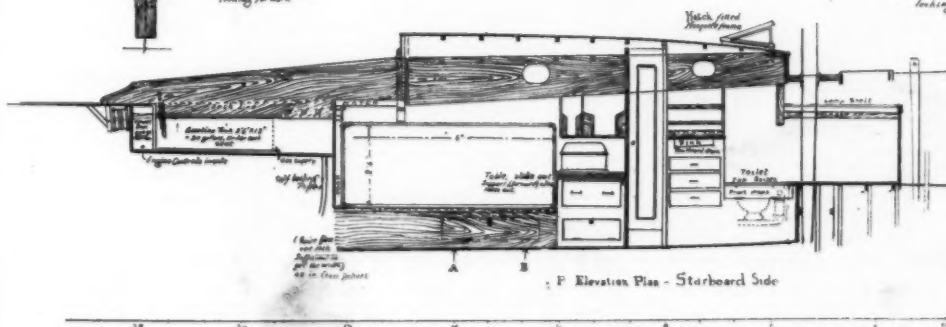
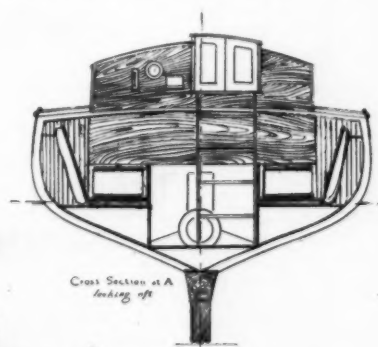
In designing this little ship I have had before me the lines of Capt. Slocum's old world girdler, Spray, Windward, Guardia, Penguin, Helenette II, White Cap, and the typical English single-handers. The displacement figured at 12,250 pounds, includes full equipment, 500 pounds in the cockpit and the gas tanks full. Every weight aboard and in place that we might expect when cruising. The net ton-

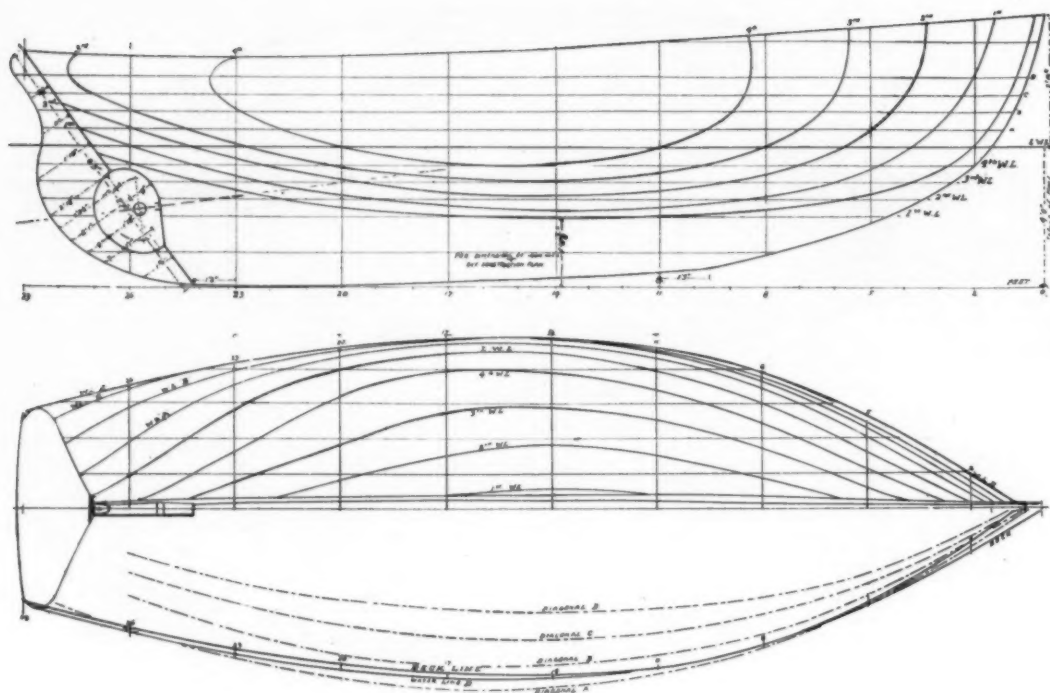
nage should keep her within the 5-ton rating and taxation.

The draft has been kept down to 4 feet. Small enough to allow of navigating, particularly under power, most anywhere. If she sails as well as White Cap and Penguin I in proportion to her increased sail area and finer lines in the case of the latter craft, we need have little care about her making a good, comfortable cruising craft for outside work. She is not designed to do her best sailing into a lashing wind and sea; then we count on the assistance of the engine—that is what it is there for—a two-cylinder, two-cycle 10-h.p. Mianus, or a four-cylinder, four-cycle 10-12 h.p. Kermath. I am not set on which of the power plants to adopt. I had a Mianus myself at one time and never knew any engine to give less trouble nor run under more-adverse conditions than that one had to on more than one occasion.



Sections showing interior arrangement of Penguin II. Scale 7/32 inch = 1 foot



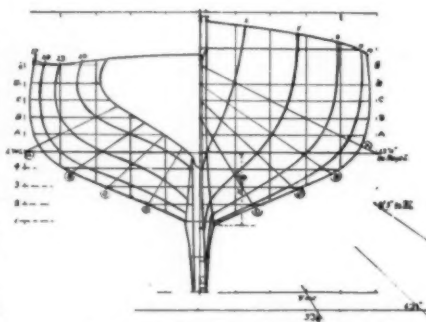


On the other hand, a friend of mine installed a small four-cylinder, four-cycle engine running at over 1,000 r.p.m. in a chunky little auxiliary. He did it against the advice of all his naval architect friends, except one good engine man, and there again, I have not seen a craft run more economically, silently nor with less vibration than his.

Going below for a while, we find in the galley a cheery little Shipmate, assisted by a 2-burner Primus. Beneath them is the fuel bin, and back of them, shelves for pots and pans. A sink with outboard drain and a salt water faucet, also comprise the galley equipment. Everything is situated so as to be conveniently worked.

Fresh water is carried in a 5-gallon portable can; as we prefer water that is fresh, to that which may have been in a tank indefinitely. At least, it feels that way to us. The can is lifted through the forward hatch for rinsing and refilling.

Another hatch, overhead here in the galley,



Lines of 29-foot auxiliary yawl.
Scale 7/32 inch = 1 foot

will bear mention inasmuch as it opens from forward and forms a wind chute. A mosquito frame fits beneath it, for use when desirable and a net slips over the whole of the cabin entrance.

Ice carried in the lower part of an ice-box, properly packed, with the cool underwater sides of the boat against it, will, I have found last a week. You will note that the ice-box is not built close up under the deck which gets hot. I believe a space should always be provided above the ice-box for proper circulation of air.

On the starboard side we have a table measured to hold a Victrola with a rack above it for records. This is designed similarly to the dish racks on the other side. A slide table supported by a bar, which also slides out may be seen by referring to the plans, also a large drawer for linen.

The cabin cushions are made that they may con- (Continued on page 60)

Table of Offsets

Lines are to Outside of Planking & from Base Line which is 4 1/2" below L.W.L.
Dimensions are in Feet inches and Eighths

Stations	0	2	3	8	11	14	17	20	23	26	29
Sheer Line	8.3.0	8.2.0	7.11.0	7.8.2	7.6.0	7.4.0	7.2.1	7.1.3	7.0.0	7.1.0	7.2.6
Rabbit	4.7.0	3.4.0	2.8.8	2.6.2	2.5.3	2.6.3	2.9.2	3.5.0	4.0.4		
Keel Bottom	4.0.0	2.4.0	1.5.0	11.3	9.0	7.6	6.3	6.3	11.0		
Sheer Line	2.0	1.3.2	2.9.2	3.11.0	—	—	4.8.3	4.5.1	4.0.0	3.4.0	
Water Line		1.1.0	2.9.0	3.11.1	4.7.4	4.9.4	4.8.7	4.5.4	4.0.0	3.4.6	
" D		11.2	2.8.0	3.11.0	4.7.2	4.9.6	4.9.4	4.6.4	4.1.3	3.6.0	
" C		9.6	2.6.0	3.10.0	4.7.0	4.10.0	4.10.4	4.6.6	4.1.3	3.4.4	
" B		7.5	2.3.5	3.8.4	4.5.5	4.10.0	4.10.0	4.6.0	3.11.4	2.11.0	
" A		5.0	2.0.5	3.5.1	4.3.4	4.8.6	4.9.0	4.4.0	3.7.1	1.11.0	
L.W.L.		2.0	1.7.3	3.0.0	3.11.4	4.5.5	4.5.5	4.0.0	2.9.4	11.1	
4th Water Line			1.1.4	2.6.0	3.4.6	3.11.1	3.11.2	3.2.0	1.7.2	3.0	
3rd "			7.1	1.8.6	2.6.6	2.10.4	2.8.7	1.9.5	9.2	3.0	
2nd "			3.0	10.4	1.6.3	1.10.0	1.5.6	10.0	3.4	2.8	
1st "			2.0	3.7	5.0	7.0	5.0	4.2	3.4	2.6	
Diagonal A		1.1.0	2.9.0	4.0.0	4.8.6	5.1.4	5.1.2	4.9.0	4.2.0	3.3.3	
" B		11.4	2.6.0	3.7.0	4.2.5	4.6.5	4.5.4	3.7.5	3.1.4	2.5.4	
" C		10.0	2.2.5	3.0.7	3.6.5	3.8.6	3.8.0	3.3.2	2.7.4	1.0.6	
" D		8.4	1.10.4	2.6.6	2.10.5	2.11.6	2.10.9	2.7.0	2.0.5	1.3.6	
Diagonal(A) intersects perpendicular 7' 0" above Base Line and Base Line 13' 11" out											
" (B)		"	"	"	6' 6"	"	"	"	"	9' 5"	"
" (C)		"	"	"	6' 0"	"	"	"	"	6' 3 1/2"	"
" (D)		"	"	"	5' 6"	"	"	"	"	3' 3 1/2"	"



Photographs by
M. Rosenfeld

Guy W. Vaughan's run-
about Amerigo, powered
with a six-cylinder Van

Blerck motor, which won
the Barthel and Scripps
Trophies in record time

Runabouts Furnish Real Sport & Close Finishes

Impromptu Races on the Detroit River Incidentally
Establish a New Record for Runabouts for Ten Miles

WHAT was lacking in numbers and interest in the hydroplane races was made up for by the events scheduled for Sunday, August 31. This was an off day in the hydroplane races and to keep up interest among the visiting yachtsmen and spectators, the committee scheduled what they called a "chance" race and later three impromptu races which brought forth close finishes and kept the crowd on its toes every minute.

Twenty-four boats of every description started in the chance race. The course was 10 miles in length and N'Everthin'; powered with a Hall-Scott marine motor was first to finish, showing a speed of 35.2 miles an hour, while the little auxiliary yawl, Dorothy, was the last to come across the finishing line, requiring 1 hour, 58 minutes and 50 seconds to complete the 10 miles. Between these two extremes, there was every type of craft entered.

The chance race is one where the winner is decided by lot. The boats have as many chances to draw the winning number from a hat as the number of boats they defeat plus 1. In other words, as N'Everthin' was the first boat to finish and as

she defeated twenty-three boats, she had twenty-four draws. Gar, Jr., the express cruiser entered by G. A. Wood, was the winner of second place, finishing 54 seconds behind N'Everthin'.

After the chance race, when things were beginning to lag, Commodore Barthel, chairman of the race committee of the Detroit Yacht Club, offered a trophy to be competed for by some of the fast runabouts in the vicinity of Detroit which were entered in the chance race and had finished

practically together, boat for boat. It was suggested that the speeds made in the chance race be used as the basis for handicapping the boats in the competition for his trophy.

Amerigo, owned by Guy W. Vaughan, vice-president and general manager of the Van Blerck Motor Company, Gar, Jr., owned by G. A. Wood, N'Everthin', owned by W. R. Kemp and Maybelle, owned by E. M. Gregory of the Belle Isle Boat Company, entered. The race was for 10 miles and Amerigo proved the winner, beating out Gar, Jr., on the home stretch by 27 seconds. Amerigo's average for the race was 28.9 miles per hour with her best lap made at a speed of



W. C. Morehead and Guy W. Vaughan, two newcomers in the motor boat racing field. The former is president of the Great Lakes Boat Building Corp. and the latter vice-president and general manager of the Van Blerck Motor Co.



Romeo, powered with an eight-cylinder Van

31 miles an hour. Gar, Jr., showed better than 35½ miles an hour before the race.

After the finish of the race for the Barthel Trophy, M. Rosenfeld, the marine photographer of New York City, offered a trophy for runabouts to be competed for on a handicap basis, the time allowances to be figured according to the speeds made in the last race. Romeo, also powered with a Van Blerck engine, and owned by Senator Holmes of St. Clair, Michigan, proved the winner of the Rosenfeld Trophy, finishing just ahead of Gar, Jr.

In both the races for the Barthel Trophy and the Rosenfeld Trophy, N'Everthin' powered with a Hall-Scott

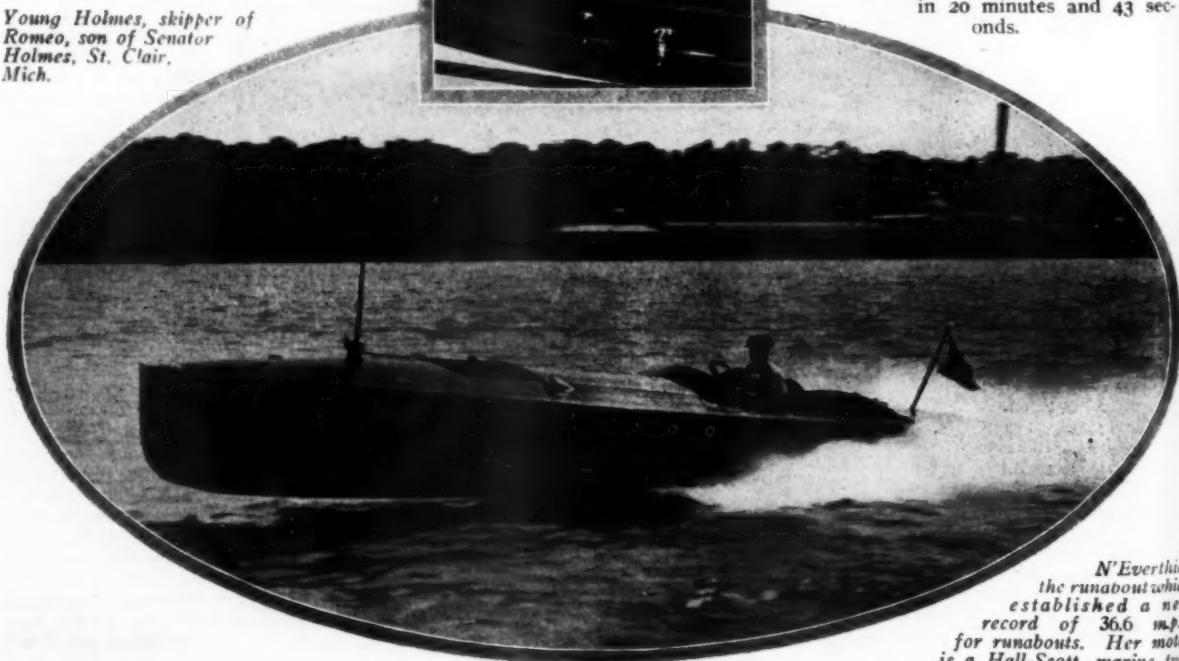
*Young Holmes, skipper of
Romeo, son of Senator
Holmes, St. Clair,
Mich.*



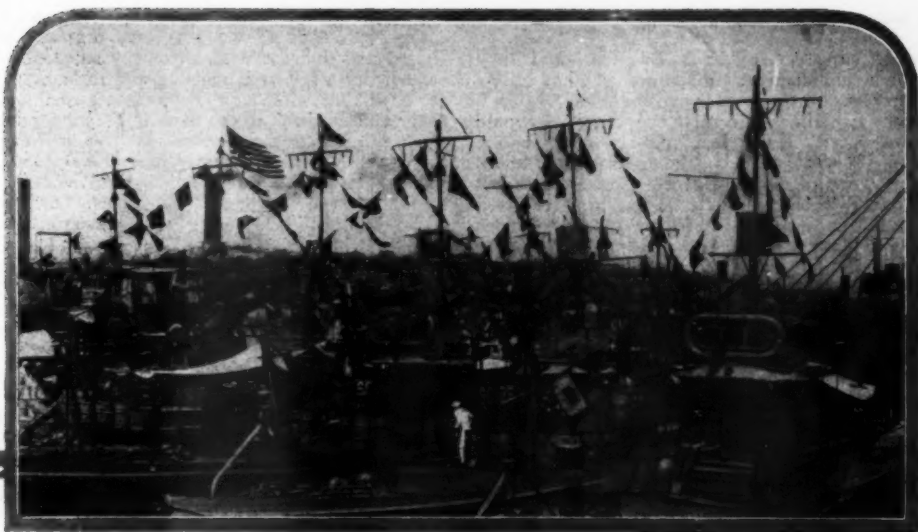
Blerck motor, which won Rosenfeld Trophy

marine motor, set up a new 10-mile record for runabouts. In the first race, she covered the 10-mile course in 6 minutes and 32 seconds and in the race for the Rosenfeld Trophy, covering the 10 miles in 6 minutes and 30 seconds. Allowing for the time she was late in going over the starting line, her speed was 36.6 miles an hour for the distance which is the best on record in competition to date. Considering the speed she made over a course of only 2½ miles to the lap, this speed is very remarkable and probably could be bettered by several miles an hour on a faster course.

The day's last race for the patrol boats, for trophies offered by William Scripps and W. E. Metzger, was won by Amerigo which covered the 10-mile course in 20 minutes and 43 seconds.



*N'Everthin',
the runabout which
established a new
record of 36.6 m.p.h.
for runabouts. Her motor
is a Hall-Scott, marine type*



Fourth of July on the chaser fleet at Lisbon

The Last Great Naval Battle of the War

Eleven Submarines Sunk in One Engagement between the Enemy and American and British Craft in Straits of Gibraltar in Closing Days of the War

PART II

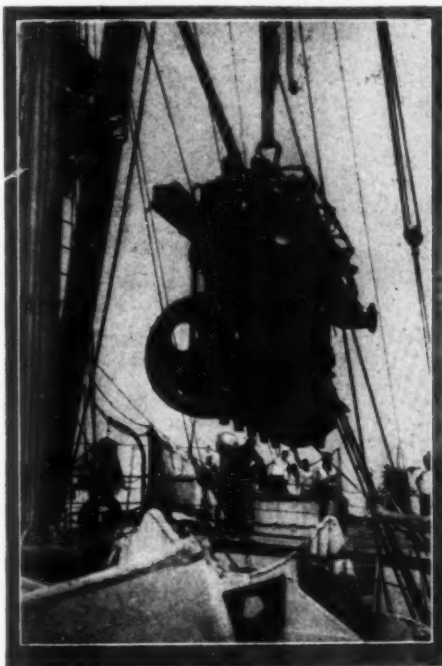
By Edward Glock

WE headed at full speed for the spot where Britannia sank, and when we got there we observed life boats and rafts floating around, but there was no trace of the German submarine. We put our listening devices into operation, but could hear nothing. Finally we proceeded to the post assigned to us, about three miles off the African coast, and almost in a line with the City of Tangiers. Our tour of duty was supposed to include four days at sea and one in port, but as soon as we would reach port and get our supplies on board, out we would go again. Sometimes at night we could hear gunfire and the explosion of depth charges but there was no sign of the enemy subs. Aside from the chasers, there were destroyers, and larger warships in the straits as well as two observation balloons.

The following morning after we had taken our station off Tangiers we were called to general quarters at 4:30 o'clock and prepared ship for action, but the scare did not materialize and we secured. It was raining and the next day it was as rough as the devil, and the chasers were sure rolling and pitching. Then our fun came. The extra depth charges we were carrying lashed on deck broke loose and began rolling around from side to side in imminent danger of exploding at any moment and blowing our little chaser into kindling wood. They broke off our ventilators aft leading into the engineers' quarters and the water came in, flooding the place and spoiling our spare clothes and saturating the bunks so that we could not sleep in them.

After we had been fighting the depth charges for a few minutes and had them secured we went down to look over our quarters and found our clothes swimming around. It was necessary to start our auxiliary engines to pump the quarters out, but the clothes were spoiled. About 9 o'clock that morning we heard gunfire, and we had a call to general quarters again. At a distance we could see a destroyer

coming our way at full tilt. Then a flare came from the bow and a shell whistled a short distance ahead of us. At first we thought they were firing at a submarine so we put on full speed to hunt for the U-Boat, but could see no sign of any. Then another shot came at us and passed between the chart house and the 3-inch gun forward and landed about fifty yards over our side. This was followed closely by another which passed over the deck so low as to be under the aerials of the wireless, just as we were coming down off a wave. The skipper concluded that they were firing at us instead of at a submarine and we broke out our signal flags but they didn't do any good for another shot went over us again. I looked to see if the flag was flying and discovered that it was wrapped around the mast. So I went up and unfurled it, but another shot came, passing over our depth charges on the stern, and we were very thankful for their poor marksmanship. They continued firing until they were about 100 yards from us. Then they came at us full speed, attempting to ram us, but we sheered off, and by this time they recognized what we were and went over to in-



Lifting one of the Standard motors out of a chaser for an overhauling at Lisbon

investigate the other chasers and finally back to their position again.

That destroyer happened to be a Brazilian and they thought we were a submarine at a distance. We had all we could do to keep our gunner from firing at them. He said, "I wouldn't shoot five times and miss every shot, I would show them how to hit five out of five," for he was an expert marksman, having been a gunner in the regular navy about six years. He was one of the crew of the Cruiser Memphis when it went on the rocks at Santo Domingo. It was a lucky day both for us and that destroyer for our gunner never failed to hit his mark.

About 2 o'clock that afternoon we received word over the wireless telephone that the submarines had broken through the barrage in the Straits of Gibraltar and we put our listening devices over the side. Soon we detected a U-Boat in our course and after a time saw its periscope at a distance.

It would appear and disappear as waves washed over it. Finally we got a bearing on the craft and dropped a depth charge every hundred feet. We had five depth charges in our rack on the stern and as the cook cut the lashings with his big butcher's knife and rolled them off at every signal, he gave each one a name. After a bit we turned at an angle and fired our Y gun with two charges and in a few seconds the two exploded set at 150 feet apart. The force brought the submarine to the surface with its sides crushed in and then it dropped out of sight again, leaving oil pools forming on the water with many bubbles coming up. We went over the spot and dropped another depth charge, but this one did not explode. While we were getting this U-Boat, S. C. 331 also, also in our division, got another. When these two boats were crushed a lot of food and stores came to the surface and many dead fish killed by the force of the explosion. In the meantime the other members of our fleet, both British and American, were busy and it was recorded that eleven submarines were accounted for that day, the Americans getting eight and the British three. As there were but five American destroyers and three chasers we got one apiece on an average.

All that night we heard gunfire and depth charges exploding and had general quarters several times, so there was no sleep. During our submarine battle our engines worked perfectly and responded instantly. When we dropped our first depth charge we had two motors going full speed, and we then put on the third, which cleared us easily from danger of our own depth charges. When we fired the Y gun the boys in the engine-room thought a charge had gone off under our craft, and that's the time the Standard engine did its work while we were bouncing about at all angles.

The next day there was no sight of a submarine but we could see the City of Tangiers off shore, and that night its lights gleaming over the waters sure did look good to

all of us at sea, watchfully waiting for a submarine.

On November 11 we got word that the armistice was signed and to treat with all enemy submarines on the surface flying a red or white flag and to bring them into port. At 2:30 that afternoon we were recalled and raced four other chasers back to the base and won, for we had our engines turning over 500 r.p.m. We reached the base at 4:30 and as we were coming into port the destroyers were towing the observation balloons in and all the boats in the harbor were flying flags. We went ashore that night and had a fine time celebrating, riding around in motor trucks from the base. The Americans, English, and French sure did enjoy themselves that night.

All the stores were closed in Gibraltar and the people out celebrating the tidings of the day.

Next day the tanker Alofin came in to put a fire out which they had been trying hard to put out at sea, but the fire was making too much headway. She anchored off Algieras where the fire raged for two days. We anchored outside of the breakwater that night because of the explosions on the tanker. The following day we looked over the engines to prepare for a run and to try and locate the sub we had sunk.

We left at 10 a.m., running at 12 knots. After reaching the locality we started trailing for the sub. In about an hour one of our trailers caught but broke loose and we knew our quarry was still on the bottom, never to come up again. We returned to port at 3 p.m., and some of the boys went ashore, getting back at 10 p.m., with souvenirs of The Rock.

November 28 we had a fine Thanksgiving dinner on board, the menu including turkey with nut dressing, potatoes, peas, radishes, mixed nuts, figs, candy, celery, grapes, apples, oranges, mince pie, plum pudding, and smokes. It sure did taste good to get a regular meal once more.

The next day we went to work in the engine-room getting things ready for our trip home. Repaired all the ignitors, putting new tips in them, cleared out the oil boxes, blew out all oil pipes, overhauled the water pumps and air pumps, charged the batteries, working for about a week. We kept our batteries up to about 1,215 hydrometer reading. Our charging rheostat was being repaired so we charged our batteries with the Delco generator.

I was talking with an English officer in Gibraltar and he asked me about our engines, inquiring if we had much trouble. I told him hardly any at all, only changing our ignitors once in a while. Then he asked about our lubrication, saying they had a lot of trouble with their oil. He said they used steam oil and it clogged up the oil pipes. I told him to use Mobiloil B as that was what we used and we never had any trouble with bearings or lubrication. I met him again a week later and he said his engine was running better and he was having no trouble.



The fleet entering Corfu, Dec. 19, 1918

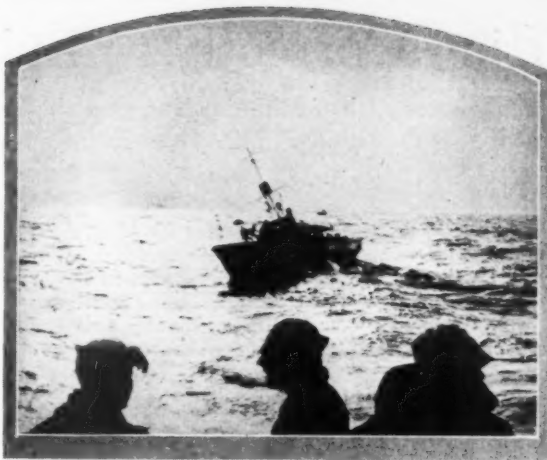


Transferring a man to another chaser at sea

December 3 twenty French chasers that had just come across and were in the Azores when the armistice was signed arrived. They were with eighteen American chasers. We received word that we were going to leave December 16, but when that date came it was changed to the twenty-first, but we did get away then, leaving at 9 a. m., with our homeward bound pennants flying. There were eighteen chasers and eleven other boats in our squadron, including yachts, ocean tugs, revenue cutters and the Gunboat Castine. Had a fine Christmas dinner at sea of canned weiners, frankfurters and hardtack. The next day we sighted land at 5:45 a. m., and we again made the Azores. When we arrived there were eighteen chasers, a lot of destroyers and submarines and auxiliary craft. Here we did some minor repairs, getting everything ready for the next leg of the journey.

We had to wait for the tanker Chestnut Hill to come in so the oil burning destroyers and the chasers could fill up on oil. She came in on the twenty-ninth, and those destroyers that got oil right away left for the States while the others remained over New Year's. Destroyers were coming and going every day, and the fleet sure did blow the new year in and the old one out. All the boats overhauled their engines, clearing out their gasoline float boxes and vaporizers and ignitors and oiling things up for our fifteen-day trip to St. Thomas.

January 3 all the squadron left, fifty-two boats in all. There were thirty-six submarine chasers and sixteen other boats, the Gunboat Castine, Mother Ship Hannibal, Oil Tanker Chestnut Hill, and the balance were yachts, revenue



The Standard engines performed just as well when the boat was keeled over 45 degrees as they did on even keel

cutters and ocean tugs. We travelled in six divisions, eight boats in a division, with the guide ship, mother ship and tanker in the lead, and there certainly was a fleet of Standard engines pushing these chasers along. Standard speed was 9 knots so we had two engines running at half speed and always kept our other engine for rescue power. The engines worked like a charm, with little trouble with the gas, so we looked after that and drained the float boxes and kept them clear of water. Whenever we wanted to put new ignitors in one of the engines we would start the reserve engine and stop the one to be worked on, get the ignitors on and start her up again. We ran at times from five to

eight days without changing an ignitor or having any trouble. Our policy was to look over everything and keep things in good shape and whenever we changed our ignitors we always repaired them as soon as replaced. We charged our batteries every day, which only took us a few hours on our auxiliary engine. The tanker didn't give the boats enough oil, and some had to use the oil over two and three times, straining it through a cloth. We filled our radiators with water for drinking purposes.

The first three days were a little rough and the other twelve days were very good. We gassed every other day so in case we ran into a storm we would have enough to last us for four days. Three divisions gassed each day. Since the accident they devised a new way of gassing by trailing the gas hose and tow lines over the stern attached to a buoy and we would pull them aboard with grappling books. In this way we managed to keep our tanks supplied during the long run, homeward bound.



Lieut. Jacoby shoots the sun on the race to New York. Note the star on the mast, signifying credit for getting a German sub

Some of the chasers were sent to Russia after the Armistice. They were given the best of the guns, equipment, and armament

Starting Correctly to Build

V—The Bending of the Frames with Additional Notes on the Steaming of Woods in General, the Fitting of the Floors, and How the Limbers Are Provided

By William Atkin

OUR next problem, now that the forms and bending battens are in place, is to set up the frames.

These will be steam bent. The above 5-word sentence suggests a contrivance, perhaps difficult of construction, of some kind in which to accomplish the steaming. If the frames are of large size, extra work would be required for the construction of a suitable steam box, with, of course, materials for its construction. However, as the frames we have in mind are of small size, 1x1-inch square, and not over 7 feet long, very satisfactory service may be supplied through the improvising of a steaming apparatus built somewhat like that shown in figure XXVIII.

This is the simplest apparatus I know of which will really soften wood. Other means than a wood fire may be used for heat—a plumber's gasoline torch, for instance. The pipe should be two-thirds full of water, and this must be replenished from time to time, as evaporation is rapid. Tie a length of twine to each frame before it is slipped into the pipe and let it dangle from the end, else you'll have a sweet time drawing the hot frame out. Four 1 x 1-inch frames will go into the pipe at a time, so, as a well-cooked one is withdrawn, drop in another to take its place.

White oak and elm of all woods are best for bending purposes—and of these two oak is superior. In selecting oak for use as frame material, choose the heavy-weight and straight-grain planks, as these kind steam best. It is a good plan, rather than sawing off frames from the edge of a plank to split the plank through its center and then saw parallel to the split, thus following very closely the grain—material is saved by doing this, for, although fewer frames are cut from a plank, fewer frames are broken in the process of bending.

Don't hesitate to use a light metal strap as shown in one of the sketches of last month's article. It will be necessary to modify the strap fastening when the frames are bent on the boat rather than on a fixed form. Use in place of the bent metal at one end a boat clamp similar to the single one shown in Figure XXVII. And another change, do not allow the iron strap to extend to the lower tip end of the frame; let at least 4 inches of wood protrude beyond the strap. The keel end of the frame thus may be fastened to the keel without shifting the metal strap for the purpose of driving home frame-to-keel fastenings.

Especially sharp bends may be accomplished by using a saw cut lengthways of the frame, as shown in Figure XXIX, and then steaming it, afterwards riveting the two parts together. This in effect is equivalent to a laminated frame through the turn and a sound frame on the straight.

As all woods, even of the same species, have different textures, it is difficult to specify, except approximately, the length of time required for softening any one piece. It is well to allow at least one hour for every inch of thickness,

This article is the fifth of a series by Mr. Atkin which will take up the complete building of a boat, step by step, in the proper order in which the construction work should be done. By following the articles in this series any amateur will be able to build his own boat.—Editor.

where the thickness is in thin plank form. For heavier timbers, from 3 inches by 4 inches and up, allow the steam bath to continue 25 per cent. to 35 per cent. longer.

Knotty wood, although well suited for general construction, is useless for bending and it is a waste of both time and material to attempt to bend it.

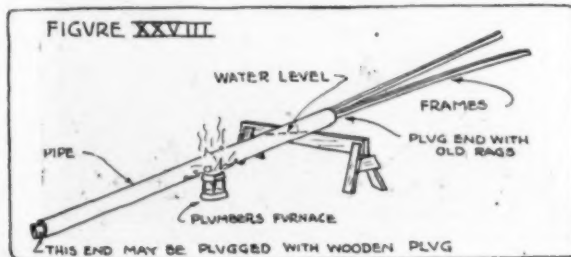
There are numerous ways for joining the heels of the frames where they join the keel. A splendid way is shown in Figure XXX. This, although it provides but half the width of the keel for an anchorage, is amply strong, for it must be augmented in strength athwartships by the addition of a floor, which is fastened with one heavy galvanized nail into the keel, and to the frame by boat nails driven through the frame and into the floor.

Don't confuse the floors of a boat with flooring. Floors are part of the craft's framework: flooring the boarding over of the cockpit and cabin floor.

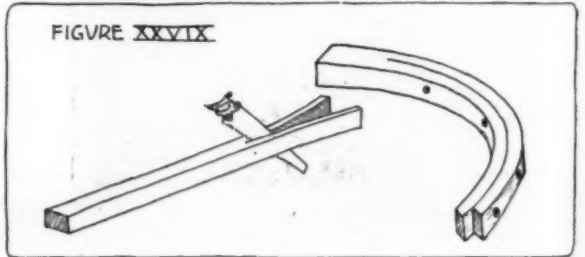
A floor of a different type is shown in Figure XXXI. This is a steam bent member of equal dimensions to those of the frames: in fact, most of these floors, which, being short, may be made from the sound portions of broken frames and from the ends which are cut off from the shorter frames at the bow and stern. Floors of this type should be fastened to the keel with a single stout boat nail, and to the frames with either galvanized screws or copper rivets.

Another variation in the arrangement of the keel ends of the frames is shown in Figure XXXII. Here the heels of the frames extend well beyond the keel and lap with the frame from the opposite side. They should be securely fastened in a fore-and-aft direction to each other with boat nails or galvanized screws. By this method the frames are doubled throughout the bottom and this doubling, with the addition of a member (called the keelson) extending in a fore-and-aft direction on top of the frames and, obviously, over and in line with the keel, creates ample strength for this portion of the hull.

Boats are sometimes built which have the frames let into the side of the keel and deadwood. This mode of building is shown in Figure XXXIII. It has certain advantages—not least of which is that the keel, by extending into the hull, may be run through the boat in an unbroken size; in other words, a 4 x 8-inch stick may extend from the end of the rudder post to the foot of the stem just as it comes from the sawmill, which thus provides a mighty substantial backbone upon which to erect the rest of the structure. Floors also must be set across frames fitted in this manner not only for the rigidity they supply to the athwartship width of the boat, but also as agents to hold the frames into the mortises along the keel into which the frames fit. Needless to say this part of the construction must be well and carefully fastened.

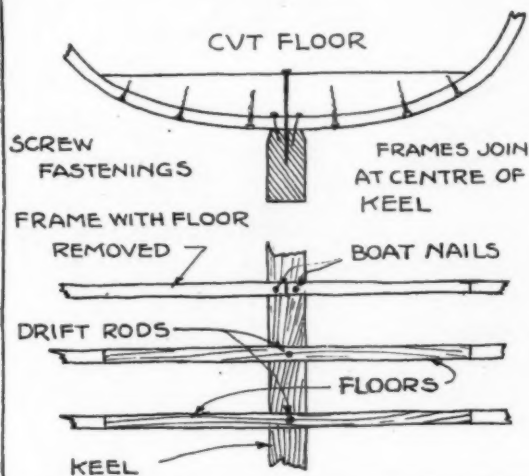


An improvised steaming apparatus by means of which light frames and material can be readily bent



Handy method of securing a combination laminated and solid frame for very sharp bends

FIGURE XXX



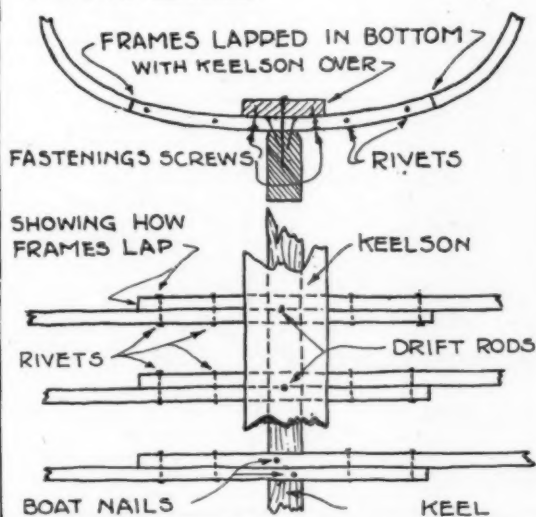
A splendid simple method of fastening frames and floors to keel

To cover every different kind of construction, I feel, would be not only tiresome reading, but of doubtful value, and so let us be content with these four methods of securely fastening the frames to the keel and the floors to both—with only such variations and combinations of them as may suggest themselves to whatever constructional work is at hand.

Except for the building of very small boats in which the width is not great, I think it is a mistake to attempt to bend frames in a single length from deck to deck. At once one sees that long material must be used for bending wood, and thus the probability of encountering cross-grained wood is great. Also long lengths are difficult to handle, and, too, they require a longer steam box, which is a consideration, especially for the amateur builder.

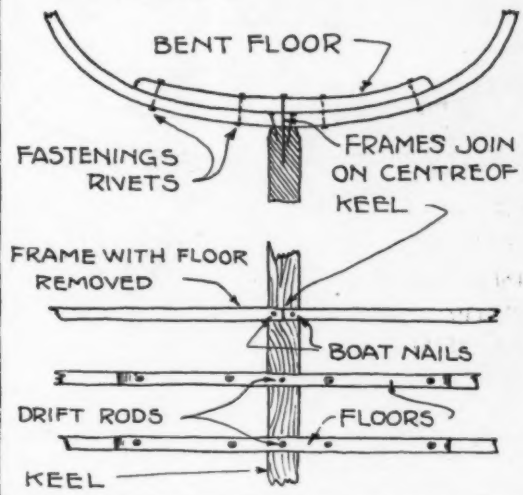
I have found it advantageous to bore for the fastening which holds the heels of the frames to the keel before the frame is put into the steam box. It is well, too, to countersink for the nail head at this time. By thus doing the heels of the frames may be fastened just as soon as they are laid across the keel preparatory to bending.

FIGURE XXXII



A method which provides greater strength by reason of doubling up the frames and the addition of the keelson

FIGURE XXXI



A different frame fastening system slightly more difficult to do

Two men working at bending facilitate this part of the construction. The inside man sets the heel of the frame to the position it belongs on the keel and, armed with a box of well-galvanized boat nails and a hammer, sends home a fastening with dispatch at the proper moment. The other man wrestles with the water supply, the fire, and the other intricacies of the steam box, and in addition rustles the cooked frames from the box to the set-up forms, and, even while the man with the hammer inside plys his trade, clamps on the iron strap, slips the frame into place and carefully pulls it up and, if luck and good judgment are with him, wraps a frame around the center of the bilge, then, for the time being, clamps it home at the deck with several heavy boat clamps. Later these upper ends are screw fastened.

Although out of its proper place in this narrative of boat building, it is not too late, I hope, to give the suggestion below.

Begin at the stern in laying the bending battens, then rather than attempting to screw the ends to the stern, which can't be done, fit first one, or better two, of the most for-

FIGURE XXXIII

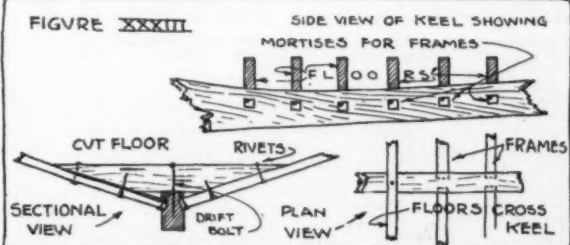


FIGURE XXXIV

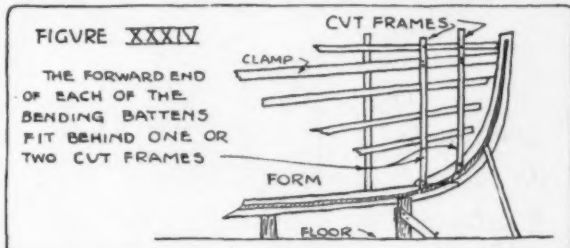
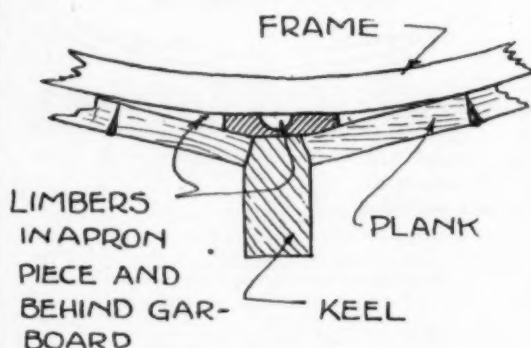


Fig. 33—Frames notched into full length keel provide a very substantial backbone

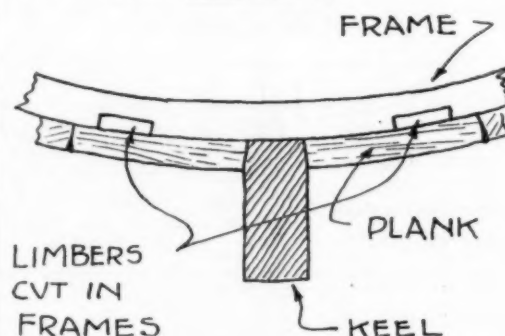
Fig. 34—Method of temporarily securing the ends of the bending battens

FIGURE XXXV



Limbers cut in apron piece and behind garboard are apt to be insufficient

FIGURE XXXVI



Very satisfactory method of limbering by means of cut in frames

ward of the frames. These may be gotten out from straight stock, using as a guide to their shape extra sections laid down on the full size drawing on the floor. With these in place and fastened, both to the clamp and to the fore end of the keel, shove the ends of the bending battens behind them, and these ends will be held secure. Figure XXXIV makes this more clear. It is hardly necessary to put bilge stringers in small round bilge craft unless the scantlings (meaning the various pieces of timber which constitute the hull) are light. A well-proportioned keel; fair sized frames, spaced not too far between centers; clamps of moderate dimensions, and well-fitted, rather narrow-width planking, at least $\frac{3}{8}$ inch thick; with nicely fitted floors on each frame will, when harmoniously combined, create a first-rate hull, and a substantial one.

I find I have described mainly the method pursued when bending frames outside of the battens. This is because this way seems the better to me. I have seen two professional boat builders, with a helper, bend and fasten all of the frames of a 30-foot cruiser in one day, which is quick work, and they bent the frames outside of the battens. Furthermore, when they had finished, each frame set snugly against the battens, and so nearly perfect were they all that a few hours' time sufficed to make all of them ready for the laying of the planking.

A troublesome item most motor boatmen have to combat is one of clogged-up limbers. Limbers are the cut-outs in various parts of the constructional members through which

water may flow freely. Those I have directly in mind are they that find a murky abode in the bilge; those away down out of sight and out of reach along the keel.

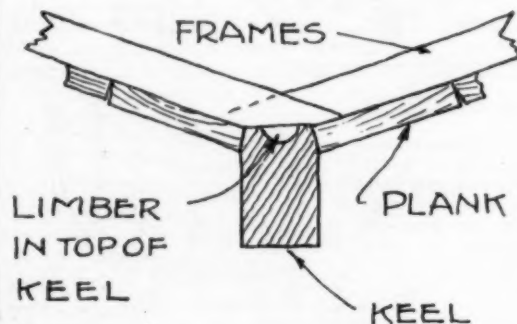
A number of different methods for creating a free passage through the frames, yes and floors, too, are shown in Figures XXXVI, XXXVII, XXXVIII.

The type of construction at the keel determines the choice of these different methods for cutting limbers.

Water will not flow through a pipe which is stopped up, nor will it flow through a stopped-up limber. It is quite impossible to cut large openings under the frames, or a wallowing big groove in the garboard streak, or the top of the keel without weakening the fabric. Therefore, as these openings must be small, draw through each of them a light brass chain of sufficient length to reach from end to end of the boat, and with additional slack, so that when both ends of the chain are made fast it may be drawn fore and aft for a foot or so. The addition of a substantial brass wire spring between the end of the chain and the point where it is fastened to the boat will greatly facilitate the process of cleaning the limbers. The spring will draw the chain back again and the operation can be readily attended to by one person. This will provide a means for keeping the limbers clean.

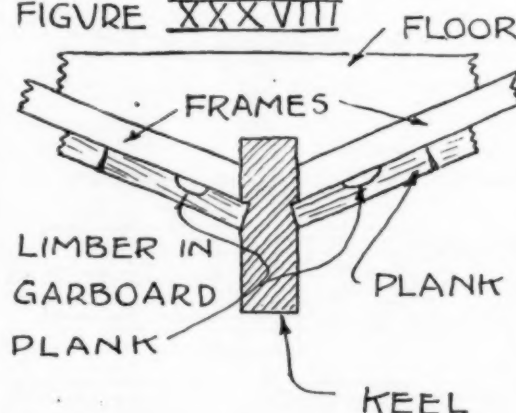
Erected, then, before us is the boat completely in frame and ready for the laying of the planking, which, with the fitting of the engine beds, I shall take up in the next issue of *MOTOR BOATING*.

FIGURE XXXVII



Top of keel notch to form limber

FIGURE XXXVIII



Limber in garboard plank too easily stopped-up



Loading gasoline at twenty-five cents a gallon in the canal at Westwego, just across the Mississippi River from New Orleans

Motor Work Boats on the Gulf Coast

More than 4,000 Small Craft Handle Millions of Dollars Worth of Trade Annually with Expedition to the Shipper and Profit to the Boat Owner

By Harry Dunn

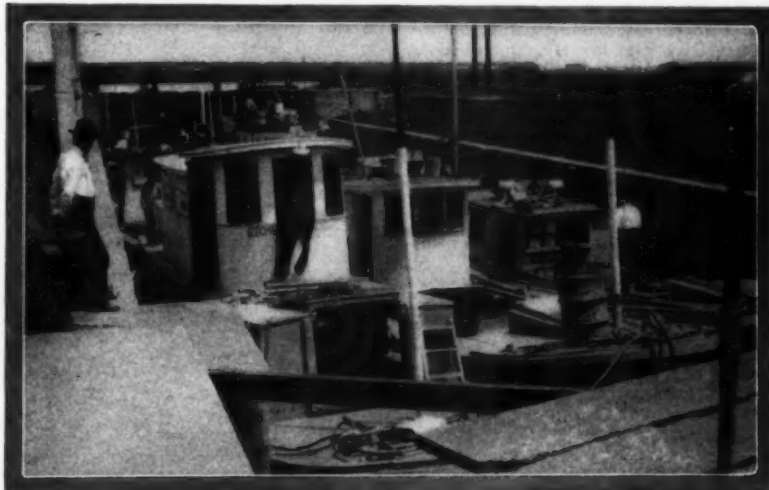
THE greatest exemplification of the value and ability of the internal combustion engine, the most important demonstration of the productiveness and profit of the motor boat when properly handled commercially, and the most impressive showing of the use of and necessity for inland waterways in local traffic is to be found today along the Gulf of Mexico coast of the United States, from Key West and the tip of Florida on the east, to Brownsville and the mouth of the Rio Grande on the west.

Along that curving shore, from the open waters of the Gulf to as far as 150 miles inland, the work of freight and express and passenger trains and of motor trucks is done by motor-driven auxiliaries, barges, freighters, passenger boats, and fishing fleets. More than 4,000 motor boats are engaged in this work on this coast. Summer and winter they carry the coastwise and inland cargoes, where nature has been prolific with waterways; summer and winter, for there is no laying up from November to April in these latitudes, they make possible the existence of hundreds of thousands of people and the establishment of myriad industries in remote points of the coast or on marsh-ringed islands to which neither teams, motor trucks or trains could ever reach, and, for twelve months of the year, they pile up handsome incomes for their owners.

It has been estimated that less than fifteen per cent of the investments in working motor boats on the Gulf coast result in failures, a remarkably small proportion, compared to the failures in other lines of business. During each

year, careful estimates by men engaged in the building, outfitting, buying, selling and operation of these boats, put the traffic—freight and passenger—handled by this mosquito fleet at close to \$40,000,000. The fish, oyster, and shrimp "crop" of Louisiana and Mississippi alone is worth \$7,000,000 annually, and, in the writer's opinion, \$23,000,000 for the balance of the cargoes handled by these boats is far too low.

Important as this fleet is, neither the governments of the five states in which it operates, the commercial organiza-



Motor freighters, fish and oyster boats being locked through the Mississippi River end of Harvey Canal, New Orleans

tions of those states or the controlling officials in the various ports have any data covering the number, value or classification of these boats, and know nothing of their work or its importance to their own territory. Such data, on which this article is based, has been gathered from the owners of these boats, and their builders, from the seafood packers and from the owners of canals and locks through which the boats must pass. It is based on estimates, sifted and re-sifted, until the writer believes it is as close to the facts as marine estimates ever have been since Noah set out on the first effort to make a boat pay as a passenger carrier.

Pleasure boats in the South are a secondary consideration. Out of approximately 2,000 motor-driven craft operating in and out of the port of New Orleans, less than 100 fly the Southern Yacht Club flag, and a dozen entries in a race under the auspices of that club—now the largest of its kind in the world—is usually followed by about eight actual starters. The motor boat to the South is a private utility, well and ably devoted to public service.

Its importance to the farthest South cannot be over-estimated, and it probably has done more to develop the immediate coast of the Gulf of Mexico, and the hinterland of Louisiana, Mississippi, and Alabama, than any other one factor, not even excepting the railroads.

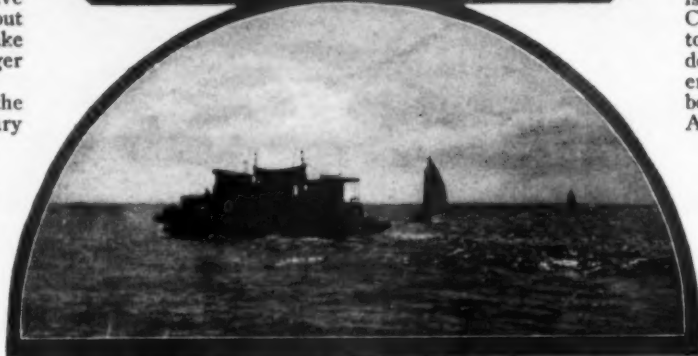
In Florida, the fleet is in the hands of Cubans and Greeks, the former in the passenger and freight traffic between Key West and Tampa and Pensacola and the islands of the Caribbean, the latter in the large and productive sponge fisheries of Key West and Tarpon Springs. In Alabama, the Gulf lines of auxiliaries running to Cuba, Porto Rico and other islands, are operated by Americans and Cubans, the inland traffic on the Warrior and Tombigbee Rivers is largely controlled by Americans. Along the Mississippi coast, where seventeen large seafood pack-

eries operate solely by means of motor-driven craft, the industry is given over to Italians, with a few Frenchmen and Greeks. In Louisiana, the freight and passenger carriers are operated largely by Americans and Italians, while the fish, shrimp, and oyster boats are mainly in the hands of the Creoles, descendants of the early French settlers of the state. The self-propelled barges which handle coal and iron between interior Alabama and New Orleans are owned and operated by Americans, as is the Inland Navigation Company, which runs motor-driven barges up and down the Mississippi River. In Texas, the motor boat operators are mainly Americans, though Italians hold most of the fishing boats which work out of Galveston and other ports.

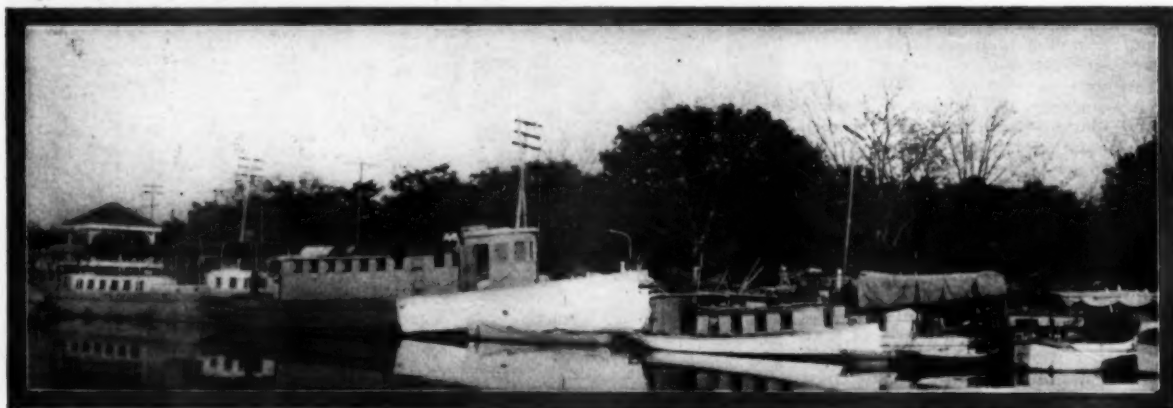
The equipment of these boats is as various as are their owners. Most of it is out-of-date, costly of operation and wasteful of fuel. The younger boatmen, many of whom have inherited their boats, fail to make changes in their power plants, largely because what their fathers used is good enough for them. Diesel, semi-Diesel and other makes of oil engines are used on the large auxiliaries, some of them, built at Orange, Texas, being of 3,500 tons, the largest auxiliaries in the world. Yet the owner of the motor freighter or the fishing boat of 2 to 50 tons never thinks of replacing his old and expensive gasoline plant with an engine operating on fuel oil, which would reduce his costs of operation by giving him fuel at about one-sixth of the cost of the fuel he now uses.

Every form of gasoline engine known to man is in operation in these fleets, with a sprinkling of kerosene, distillate and even breeze-coke producer gas engines on the barges and some of the larger boats. Many are stern-wheelers, on which the horizontal engine is used. With the owners of these, the Fairbanks-Morse engine is a favorite. Among

(Continued on page 62)



Del Rito, one of the oldest and most profitable of the motor freight and passenger carriers plying between New Orleans and the lower coast



Bayou St. John, New Orleans, filled with work boats

Photograph by M. Rosenfeld

Waw Waw, the latest member of the Cinderella family, is unusual in that it combines cruising comforts with good

speed ability. Her power is a six-cylinder Scripps engine

A New Recruit and a Young Veteran

Waw Waw, a New Cruiser and Whippet, Credited with Four Service Stripes, Are Doing Pleasure Duty

WITH mahogany sides shining, her six-cylinder real express cruiser. Directly after her trial runs Uncle Sam took her over and she has but lately been returned to Oliver C. Jennings, her owner.

Photographs by Edwin Levick

A new power plant has been installed, consisting of a pair of Model J-6, 7¼x9-inch, 300-400 h.p. Murray & Tregurtha high-speed engines. On a number of runs Whippet showed an average speed of 26 knots or about 30 statute miles. Structurally she is a happy combination of speedy lines and cruising comfort. Rigidity is supplied by four steel bulkheads which divide the hull into five water-tight compartments.

Every modern improvement and several original ideas of Mr. Thompson for cruising comfort have been incorporated by the Reliance Motor Boat Co., of New York, N. Y., in Waw Waw.

Camouflage removed and after undergoing a process of rejuvenation, Whippet veteran S. P. 89 entitled to four service stripes comes racing back to the ranks of pleasure craft. Every inch of her 72x12 feet proclaims her a

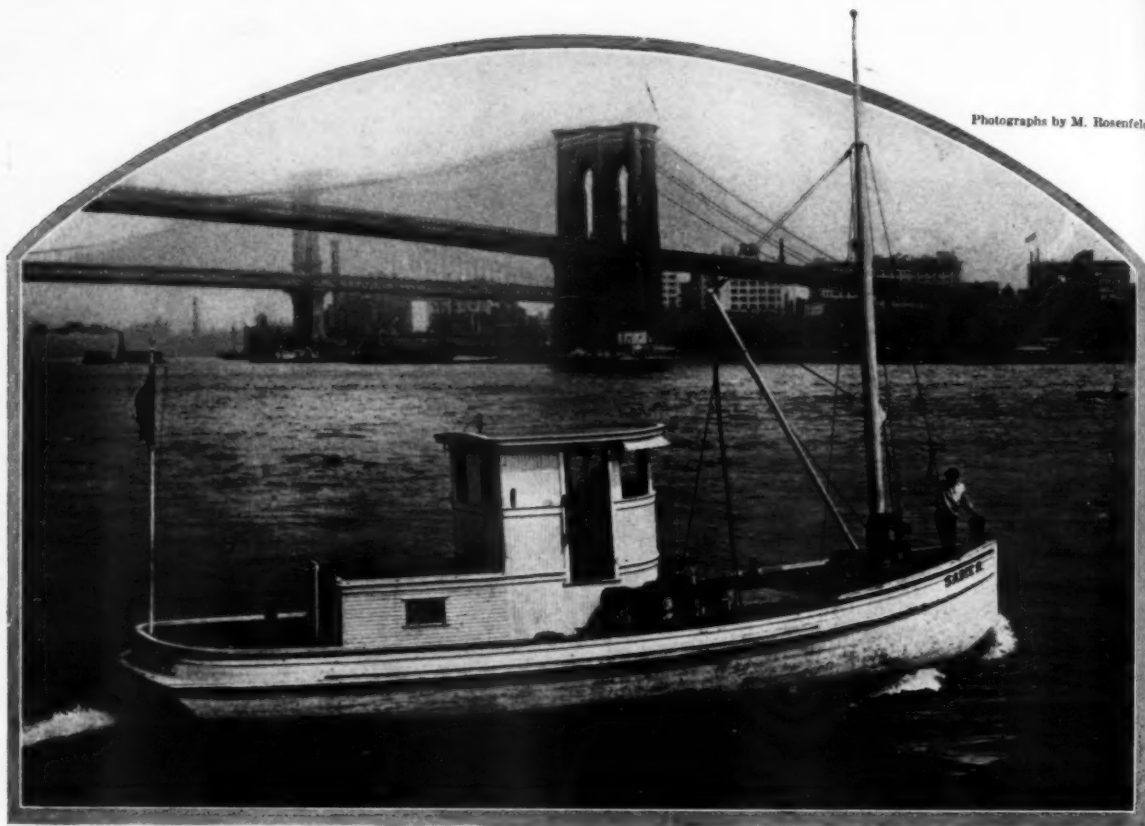
Bow view



of Whippet



Whippet, a 72-foot express cruiser, makes a speed of 26 knots with her twin high-speed Murray & Tregurtha engines



Photographs by M. Rosenfeld

The main trouble with waterway transportation in competition with the railroads, says General Black, is that it is far behind the times in its equipment. Boats have not progressed in the same ratio as the railroads and most craft lack many of the improvements that have been made

Inland Waterway Transportation

Transportation Is a Public Necessity—To Develop and Operate It the Money Must Come from the People at Large

By Maj. Gen. William M. Black
Chief of Engineers, U. S. Army.

UNLESS ample means of transportation are available and each class of transportation is used fully for the work for which it is best fitted, the necessary distribution of our country's products cannot be made. Localities will have to be supplied locally. The general resources of the land cannot be availed of. Economic loss must result and this economic loss must be paid for in cash and in want.

It is, therefore, incumbent on us as a nation to see to it that all of our means of transportation are developed—and are used, each in co-ordination with the others so that the maximum, and therefore most economical, results will be secured.

The transportation agencies available may be classified broadly as follows:

1. Standard gauge steam railways.
2. Water borne freight and passenger carriers.
3. Standard gauge electric railways.
4. Self-propelled and animal-drawn highway vehicles.

Each class has its own advantages and limitations. Each of the first three are more or less dependent on each other and on the fourth class for collection and distribution of the articles carried. If the carriage alone of the freight is considered, the relative cost of transportation is in general in the order:

1. By water.
2. By steam railroad.
3. By electric railroad.
4. By motor truck.

If we consider the long distance carriers, the transporta-

tion agencies must be limited for the present to two only; that is, steam railways and water carriers. By the nature of the carrier, transportation by water must be limited to transfers between two points on the shores of the waterway. Any distribution from those points must be made by a carrier of another class. Railroads are free from this limitation and a railroad can theoretically extend its branches to each producer and consumer. Practically, this is impossible, so that we find collection and distribution for railway carriers must also be made by means of one of the other forms of carriers. Another disadvantage suffered by the railway carriers is the large amount of space required for main terminals, for the storage of cars, and for the composition and distribution of trains. Difficulties from this increase as the cities in which these terminals are usually situated increase in size, and the congestion of these terminals is a cause of great delays in rail freight deliveries. So great is this disadvantage that the question of the removal of these terminals to greater distances from centers of collection and distribution is receiving serious consideration and the necessity of a closer co-ordination of rail and motor truck freight movement is constantly growing more pressing.

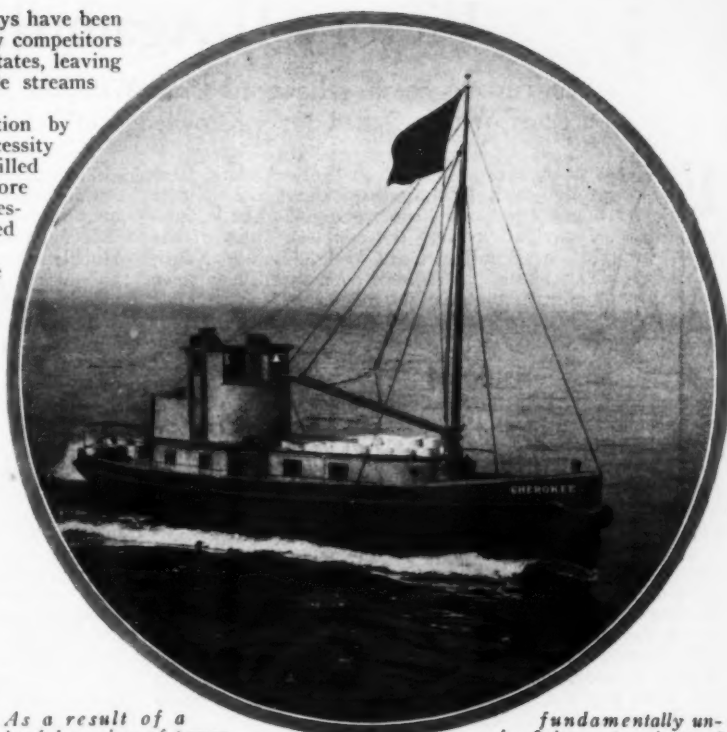
The mere statement of the desirability of a close co-ordination and co-working of all these agencies for the movement of freight, as a necessity for the general prosperity of the country, would seem to be all that is necessary to lead to a conviction of this need; yet these agencies are not co-ordinated today. It is known that for years past there has been destructive competition between the railway

and the waterway carriers in which the railways have been so successful as to have driven their waterway competitors from the field in a great part of the United States, leaving the great highways formed by our navigable streams and canals almost unused.

The recent effort to increase transportation by water throughout our country, rendered a necessity by demands of the war which could not be fulfilled by the railways alone, has brought out more clearly than before the obstacles to this necessary co-ordination and has emphasized the need for the removal of these obstacles.

The ultimate cost to the shipper will be the controlling factor of the agency to be used for shipments. It is, therefore, manifest that the prime requisite for the co-ordination of the various agencies shall be that transportation rates charged shall be based on the cost of the service rendered. In no other way can the advantages and disadvantages of each agency be weighed and real co-ordination be assured. Further, in no other way can be secured the desideratum that transportation in general is carried on most economically. It is notorious that the existing system of railroad freight rates is not based on this principle—the cost of service rendered being in some cases greater and in some cases less than the rate. It is further notorious that at the present time the classification of the freight itself, on which is based the charges for carrying any given commodity by rail, bears little relation to this principle.

Is the practical elimination of water carriers from our inland transportation agencies altogether the fault of the railways? It is not. Compare pictures of Mississippi River packets and terminals today and those of fifty years ago. They seem of the same date, and in general are so, in so far as affects economical transportation. With these compare the railway equipment of today and that of fifty years ago. Note the vast improvement in every feature. The railways have progressed—the water carriers have stood still. Compare also the regularity and reliability of the railway freight service with the haphazard methods of many of our water carriers. Is there any good reason why merchants should not prefer to ship by rail? Happily all water carriers are not in this class. The service on the Great Lakes is a notable example of a well conducted and well patronized business. Steamboat service on the Hudson and on Long Island Sound has also been reliable and has



*As a result of a
lawful exercise of power
water competition was almost eliminated in many places*

*fundamentally un-
in fixing rates, internal*

flourished. So with other lines. The barge service recently inaugurated on the lower Mississippi is now showing that regular and reliable service can be established there. To be successful, water transportation must be organized and operated as efficiently as are the railways.

And waterways have one great advantage over the rail. Boats are not confined to a fixed track and, therefore, over any given route there is no necessity for a monopoly of transportation management. Over the same water route can ply the boats of a great company and also the boat whose stockowners, directorate, managers, and operators all are sheltered by the same cap, the wearer of which is the acquaintance and friend of all of his patrons. For a single road I am arguing for a rail rate, based on cost of

transportation; for two roads covering the same territory, based on the cost of the easier haul; for the immutable laws of trade must govern in railroad as in other business. I am asking that water carriers receive fair and equal treatment by the railroads. I am told that if this were accorded, there are routes where the railways would be given no traffic, because since the railway charges must cover the interest on the cost of railway construction, as well as of operation, and the water carriers have their routes made and maintained at public expense, the boats would have such an advantage that the railways would have to be abandoned. This is one of the problems facing transportation interests today.



The ultimate cost to the shipper will be the controlling factor of the agency to be used for shipments

Victory II Again the Victor

The Famous Sterling-Powered Craft Wins the McAleenan Cup Offered in a Race Which Called for a Knowledge of Seamanship and Local Waters

FOR several winters past the New York Athletic Club in connection with local units of the United States Power Squadrons has held instruction classes in various forms of navigation from the simplest Rules of the Road through Coast Piloting, Dead Reckoning, and Nautical Astronomy. These classes were open to all yachtsmen entirely without cost, and many attended.

To further the knowledge gained in the classroom, Arthur McAleenan, an enthusiastic yachtsman of The Winged Foot Organization, offered a cup for competition in a race that would bring into practice the study of the winter and it was decided to make the conditions as simple as possible. Second and third prizes were added by the club.

All Long Island Sound boats voyage to Lloyds over Labor Day, so Saturday, August 30, with the start at Huckleberry Island and finish at Lloyds Harbor presented an ideal date and course. The race was open only to bona-fide cruisers with limits of 30- to 60-foot waterline.

Seven courses were allowed and a contestant had till noon on day of race, (some hour and a half before first boat started) to make his selection which could not be changed. Having previously figured the length of the seven courses which ranged from $23\frac{1}{2}$ to $25\frac{1}{2}$ miles and having carefully figured his tides he then had only the weather conditions to consider on the day of the race and decide whether the wind might favor one course or the other notwithstanding a slight difference in length.

The boats were started on their handicap and while this is the custom in many localities it was quite a novelty on Long Island Sound and did not seem to be as great a success as the usual "one gun" start in general practice, even though it required no figuring of allowances at the finish and the first boat across the line was the winner.

Course D seemed best for the following reasons (mainly tidal) as the sea was flat and only the faintest breath from west at noon, when course selection had to be made, with glass steady and very hazy.

The tide would be high about 3 o'clock, so starting around 1:30 to 2:00 it gave a strong fair tide on first leg westerly to Hart Island Bell. The next leg would give you a head tide but by cutting in close to Sands Point, a lesser current was met close to the beach with slack water soon after. Then a fair tide from Matinick to the Bell buoy off Lloyds Point on turning which a beam tide was carried to lee of Lloyds Point with more or less dead water close along shore till abreast of Target Rock (while out in Huntington Bay the tide would be strongly ahead). This could be cut diagonally by laying a course from Bell 13A close to Target Rock and then across to Spar 1 at entrance to Northport Bay, after which a fair tide was had nearly to finish line, then the tide was abeam coming out of Huntington Harbor.

In addition to these reasons the day was very hazy and course D gave you marks that could be seen from each other or (what was just as good) some intermediate buoys or other aids directly on the course. Also the measurements showed a small saving in distance.

Of the seven courses only two others were selected by any of the competitors—B and C. B was bad in my opinion for the reason that a boat starting at around 1:30 would have to buck a head tide well out in the Sound for an hour on leg to Greens Ledge, and then on the leg to finish have the tide abeam all across the Sound and head tide on entering Huntington Bay. Besides which it was the longest course and on such a hazy day required navigation entirely by compass with chances of error in deviation and tidal allowance.

Course C under prevailing conditions was undoubtedly the second choice but was open to the objection that the last of the flood was encountered to Matinick then crossing the Sound twice the tide was at all times more or less on the quarter with strong head tide in Huntington Bay and also open to the objection of requiring compass courses as mentioned above in course B.

The courses selected were handed to the Regatta Committee in sealed envelopes and there was much speculation at the line as to just where each boat was going.

Irene, the limit boat, started first and as she circled Huckleberry Island it was easily seen Rear Com. Lauten had picked D, showing results of the winter instruction meetings. Then came Kodak with Skipper Day on board and, disappearing in the haze to the northeast, it was a question as to the selection, which afterward turned out to be course B to Greens Ledge. We on Victory II followed next, pinning our hopes on D and, cutting in so close to the rocks of Huckleberry Island you could almost see bottom, circled to the west after Irene. Empress followed in less than a minute, heading to the east after Kodak.

The Gardenia was next to start, heading east by south for Matinick, the first turn on course C. Inga was next, following Victory II and Irene on course D, with Commander Williams' Marilene, scratch boat and last to start, heading after Gardenia on course C.

Victory II gained $3\frac{1}{2}$ minutes on Irene to Hart Island Bell, was but two minutes behind at Prospect Point and passed her off Hempstead Harbor. Then the only competitor we saw was the Marilene, who passed the Matinick buoy some four minutes ahead of us, but as she had to cross the Sound twice while our course was nearly straight we had no great fears that the Chief Commander of the United States Power Squadron would beat us out, notwithstanding his careful navigation and fine ship. Could good wishes have won I am sure the Marilene would have been unbeatable, for we on Victory were rooting for our ever genial leader of the Power Squadron to win as a compensation for his hard luck in the Block Island Race.

At the Matinick buoy the ebb tide was helping along the old reliable Sterling in fine shape and we were traveling a good ten knots (actual not paper) over the bottom, rapidly dropping Irene out of sight astern in the haze, and as Marilene disappeared to the northward we lost the last sight of our competitors and amused ourselves picking up the various boats of every type, description and size, all bound down for the same destination. Then we picked up the village erected by the movies for a South Sea Island picture on Lloyds Point and began to anxiously scan the northern horizon for Kodak and Gardenia whose course we were not sure of but expected to find somewhere around the entrance to Huntington Bay. Nothing we distinguished could be taken for either craft till out of the haze to the northeast appeared a craft that, end on, seemed to resemble Kodak and as we figured she had selected course B she could lay straight for the finish while we had to cross the bay and turn Spar No. 1 at Northport entrance before heading to the line. The glasses were of no help in making her out but we did not bother much till as we converged it was seen the other boat was making three feet to our two and if it really were Kodak she was getting her revenge for what we did to her on the race to Blockers. The stranger sheered off a bit and we made out a tender astern which showed plainly enough it was not our competitor and as we approached still closer we found her to be a speed boat going along in great shape, so we applied ourselves to getting into Huntington Bay with as little head tide as possible and stuck close to the Lloyds Neck beach till abreast of Target Rock, then lay a course to Spar No. 1. As we came out from behind the beach we got our first view of the finish line between the old and new light-houses at Lloyds and with nothing in sight astern wondered if someone had not already finished and beaten us badly. It was either that or we were to repeat our Block Island win. The glasses made out a vessel near the committee boat which seemed to be waiting for the racers and again our fears arose, but as this boat suddenly turned and made for the Spar No. 1 mark we were mystified as to whether her skipper had failed to sail the entire course and realizing his error was coming over to make the turn. Anyhow, we

(Continued on page 80)

Matthews Marine Type Standardized Lighting Plant

The 1920 user of a cruiser or large motor boat will find his friends using a great many unit electric lighting systems on their motor boats.

The Matthews Engineering Co., of Sandusky, O., is putting out a 300-watt, 32-volt generator unit, which is 22½ inches long overall, 18 inches height overall, and 12 inches width overall.

The unique feature of this plant is that the crankcase of the engine and the housing of the generator are one casting. There are three major castings only, cylinder, flywheel, and the main frame casting. This feature has been patented, patent having been recently issued. It is a great saving in manufacturing cost and motor boat enthusiasts are looking forward to this type of generator unit being placed on the market in very large numbers at a price much lower than any existing prices on the usual farm type of lighting plants.

This generating set is supplied with circulating pump, switchboard, and 44-ampere hour storage battery.

The manufacturers have issued a beautiful 48-page catalog fully describing the generating sets which they make in 15-light, 50-light, 200-light and 500-light sizes.

A \$25,000 Laboratory for Testing Motors

The Hall-Scott Motor Car Co., of Berkeley, Cal., have completed a laboratory costing \$25,000 for testing and running in new marine motors. After a thorough laboratory test these motors are disassembled, thoroughly inspected throughout and again assembled when they are ready for immediate installation. The Hall-Scott company enjoy the unique distinction of being the manufacturers of both aviation and marine motors.

Burnham & Ferris Open Offices

Rufus Bradford Burnham and Henry Ferris, Jr., have opened offices at 30 East 42d St., New York, N. Y. Their intention is to build up an advertising agency solely on the ground of service. From past performances of both members of the firm this is going to be an easy matter for them to accomplish.

Caille Perfection Motor Co. Further Perfects Its Organization

Antoine Liberty, who has been superintendent of the Caille Perfection Motor Co., of Detroit, Mich., plant for the last twelve years or more, has resigned and entered the contract machine business for himself. He is succeeded by Julius Maas, who has been with the Caille company for almost as long a time as Mr. Liberty. Other

Yard and Shop

Notes of Interest to Both Owner and Manufacturer

appointments include R. C. Cunningham, as assistant superintendent, and George Sadler as production manager.

Elithro a 55-Footer

The 55-foot cruiser Elithro depicted in the illustration on this page was designed and built by the Luders Marine Construction Co., of Stamford, Conn., for Captain James Laughlin, 3rd. The boat is equipped with two six-cylinder Van Blerck engines and is capable of a speed of 26 m.p.h. The engines are placed amidships with the owner's cabin and toilet room forward, and a toilet, kitchenette, and stateroom located aft. The odd little conning tower on the after deck is a sort of shelter cabin in which the headroom is about 5 feet, makes an admirable shelter in bad weather, and an ideal place for the

cently for the manufacture of the smaller engines from 3 h.p. to 65 h.p., and are ready to fill any demand for these sizes on short notice. A little later immediate deliveries can be made from stock.

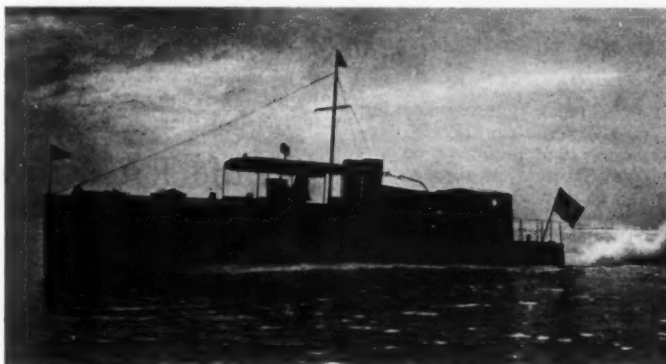
The Jacobson Engineering Co., Inc., are very optimistic regarding the future of the oil engine and are placing offices and dealers in all principal cities of this country and foreign countries.

Rally to Cause of Class Racing

Nineteen-twenty means much to the man interested in boating as the three years of war have taken the young men away from this sport and much must be done to get them interested in the sport again.

If we are to boost class races as are held by many of the eastern clubs a start must be made with smaller boats.

While it is true that every one would like to own a real high-powered boat, expenses make this impossible. Prior to the war many small class races were



This attractive Luders cruiser is the property of Captain James Laughlin, 3rd. The craft is now on her way to Florida for a winter's cruise

owner to breakfast on his daily run to business.

This boat is now on her way to Florida for a winter's cruise.

Jacobson Opens New Sales Office

The Jacobson Engineering Co., Inc., has recently opened an office at Room 432, 50 Church St., New York, N. Y., which will be the main sales office. The Jacobson company are sole sales representatives for the crude oil engines manufactured by the Jacobson Gas Engine Co., of Albany, N. Y. They are also direct factory representatives for various factories building gas engines, Diesel engines, gas producers, centrifugal pumps, compressors, and all necessary machinery for complete marine and stationary power plants.

C. A. Jacobson, Jr., will be the sales engineer in charge. Mr. Jacobson has been trained at the works and is well qualified to advise regarding the installation and application of crude oil engines.

The Jacobson Gas Engine Co. have greatly increased their facilities re-

run. Since this time, however, there has been but little activity. Concentrated efforts to interest not only the individual but the various clubs throughout the country will result not only in a revival of the sport but in booming it beyond any expectation.

The Mississippi River Association is planning to have a boat to represent every club in their association and have issued a challenge to boatmen and boat clubs throughout the country to build a class boat and enter them in a series of races on the Mississippi. The challenge of the Mississippi Racing Association is one worthy of consideration and encouragement which should mean much in the revival of motor boating.

Work of the American Malleable Casting Association

When an industry, by the concerted effort of its members evidences a determination to establish a high standard of quality, for its product, it is but natural that considerable interest should be aroused.

Aside from the various laboratories

of its members the association maintained at Albany a Research Department for investigation and experiment, and for the testing and analysis of the daily output of each member of the Association. Impartial tests were made and the results together with direction for improvement, where the need was indicated were forwarded to the respective members.

So successful has the work of the Association proved that to-day it is credited with bringing all its members to a high average quality in their product known as malleable castings.

These certificates will be renewed quarterly where the quality required is maintained.

At the same time the Association is issuing a booklet on malleable iron and its production which will prove very interesting to those who desire a better understanding of the methods employed in the improvement of malleable. The book can be obtained by any of our readers without charge by writing to the American Malleable Castings Association, 1900 Euclid Bldg., Cleveland, O.

R. E. Lovekin Advertising Engineer

R. E. Lovekin, formerly managing director of the American Screw Propeller Company and authority on engineering advertising, has disposed of his interest in the American Screw Company and has opened offices at 610-11-12 Penfield Bldg., Philadelphia, Pa., under the name of R. E. Lovekin, Advertising Engineer.

Mr. Lovekin's experience in both the engineering and advertising fields, as well as his wide acquaintance among the shipyards' officials and marine engineers of the country place him in a fine position for success in his new capacity.

Pressure Gauges and Sight-Feed Oil Gauges for Motor Boats

The United States Gauge Co., of New York, N. Y., Chicago, Ill., and Detroit, Mich., are now making air gauges, oil pressure gauges, and sight-feed oil gauges for use on motor boats. Their entire line of gauges carries with it a guarantee of constant readings, moisture- and dust-proof cases, non-corrosive movement and non-freezable springs.

N. G. Rost Heads New Sales Co.

N. G. Rost, who has been General Sales Manager of the Duesenberg Motors Corporation since its organization in 1916, has resigned. Prior to 1916, he held the same position with the Loew Victor Engine Co., of Chicago, who were the predecessors of the Duesenberg Motors Corporation.

Mr. Rost was very active in the formation of the Duesenberg Motors Corporation and is responsible for the

enormous prestige and publicity secured for the Duesenberg engines, in spite of the fact that the Company never really got into production and its advertising appropriations were always very limited. Mr. Rost attributes this rather unusual situation to the proper use of the trade publications and the splendid co-operation given him by the editors.

Mr. Rost states that he has organized a sales company that will represent several leading manufacturers in the automotive field, and that his new organization will have headquarters in New York, with a branch office in Detroit.

Anti-Noise Marine Telephone

The Magnavox Co., of Oakland, Cal., wish to call to your attention their new anti-noise transmitter which is being used by the Army and Navy for radio and inter-communication on airplanes. The Magnavox telephone will insure perfect speech transmission in the deafening roar of Liberty motors or the throb of ship's engines.

The United States Shipping Board has equipped a number of merchant vessels with these telephones.

The Magnavox company will be glad to give information to any one interested in their new device.

Trade Literature Marine Glue—What to Use and How to Use It

L. W. Ferdinand & Co., of Boston, Mass., have just completed a new catalog for Jeffries Marine Glue. This catalog will prove of untold value for all information regarding the use of marine glue for caulking decks and hulls; for applying canvas, joining timbers, planking of boats, and sea-planes. These are only a few of the many uses of Jeffries Marine Glue described in the booklet.

L. W. Ferdinand & Company will be pleased to send any one interested in marine glue a copy of this booklet.

How to Use Valspar on Boats

Is the title of a handy little booklet just put out by Valentine & Co., of New York, N. Y. The information contained in this booklet will prove of great value to all those interested in the preservation of wood with varnish.

A New Size Directory of Gill Piston Rings

The Gill Mfg. Co., of Chicago, Ill., have just issued a book full of interest to the boat owner, ship builder and engine manufacturer. With the assistance of this book piston rings can be ordered in advance from the nearest jobber and so avoid delay when overhauling. This book is issued in various sizes and contains information regarding the proper fitting of Gill piston rings and likewise a telegraphic code to facilitate

quick orders. Those interested will also find in this book a list of the thirty branch offices of the Gill Mfg. Company, located in practically every large city in the United States, each one carrying a complete line of Gill piston rings.

New Catalog of Electric Air Compressors, Drills and Valve Grinders

Black & Decker Co., of Baltimore, Md., have just published a new catalog bringing to the attention of all interested their complete line of portable electric drills, electric air compressors, and electric valve grinders.

This splendid catalog is beautifully illustrated and full of useful information.

The Sterling Line

Always having in mind the improvement of the gasoline motor, the Sterling Engine Co., of Buffalo, N. Y., has published a house organ for distribution among their workmen and to dealers in their motors.

Their issue of August 1 contains a splendid article entitled "Weight and the Modern Marine Engine." It is interesting to note that the Sterling Engine Company actually built the world-famous British Sunbeam twelve-cylinder airplane engine of the identical type that recently crossed the Atlantic in the British dirigible.

Bowser Four-in-One Folder

A novel folder is being issued by S. F. Bowser & Co., Inc., of Fort Wayne, Ind., in order to completely show the prospective buyer of a Bowser battery storage system for lubricating oil how the various units will make up a complete system. This little folder clearly indicates how the single units make up a battery of tanks and their uniform appearance. In addition to this, the folder tells in detail how Bowser equipment saves oil, time and money and promotes cleanliness and safety.

Canoeing, Sailing and Motor Boating

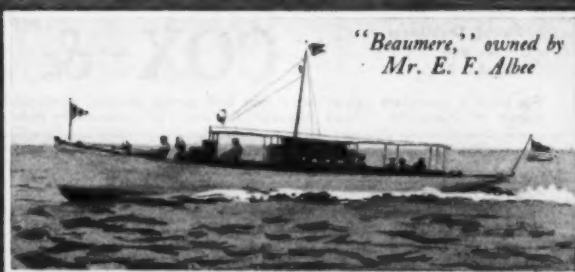
It is not necessary, as Lieutenant Miller, author of this interesting book points out, to be even moderately wealthy to enjoy one's own craft. It can be done simply and inexpensively and it is to help you build or select and manage the boat of your heart's desire that this volume is written.

Sailing and boat-building, canoeing and cruising, motor-boat management, and construction, these are the three main divisions of the volume, and Lieutenant Miller neglects no point of practical value or interest in the course of his eighteen chapters.

It is a book for all ages. Admirable for the boy who is just beginning with boats and thoroughly professional for the man or woman who wants to know the real fundamentals of boating.



"Madge," owned by
Mr. W. H. Day



"Beaumer," owned by
Mr. E. F. Albee



These boats were all built
and Valsparred by the Con-
solidated Shipbuilding Cor-
poration, New York.

Photos by
Rosenfeld, New York

W

HATEVER the type of boat and whatever its equipment, there is only one varnish that can do full justice to the skill and craftsmanship of its builders—and that is Valspar.

This is proved by the experience of boat-builders and owners everywhere who have used Valspar and put it to the most severe tests.

Fresh water, salt water, hot water, oils, grease, chemicals—things that mar or ruin the appearance of boats

finished with ordinary varnish—none of these will affect your boat if it is protected with Valspar.

Because Valspar is both water-proof and weather-proof it is far more durable than any other varnish. It will not turn white.

We will be glad to send you on request a copy of our handy booklet, "How to Use Valspar on Boats."

VALSPAR ENAMELS

Made in 12 rich colors, and in black and white. Being composed of pigments finely ground in Valspar, they have all the desirable qualities of Valspar itself for both interior and exterior work.

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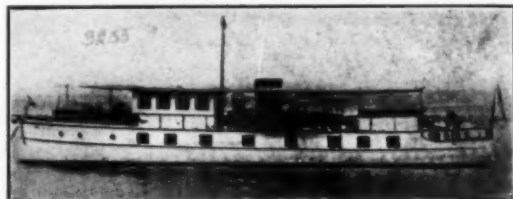
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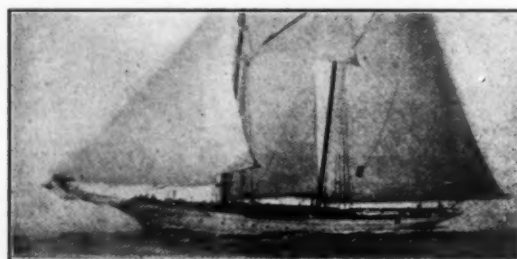
We have a complete list of all steam and power yachts, auxiliaries and houseboats available FOR SALE and CHARTER. A few are shown on this page. Plans, photographs and full particulars furnished on request.



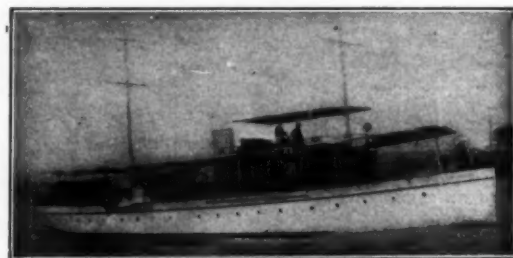
No. 636—For Sale or Charter—Modern 150 ft. steel steam yacht; most desirable of type and size available. Excellent accommodation; good speed. First class condition. Cox & Stevens, 15 William Street, New York.



No. 3235—For Florida Charter—Roomy twin-screw power houseboat; 80 x 16.7 x 2.10 ft. draft. Speed 10½ miles. Three double staterooms, saloon, toilet room, etc. Price reasonable. Cox & Stevens, 15 William St., New York City.



No. 148—For Sale—Steel, flush deck, steam auxiliary schooner yacht; 130 ft. overall, 110 ft. waterline, 26 ft. beam, 15.6 ft. draft. Speed under power 9 knots; compound engine; electric lights; all conveniences. Extremely able craft; heavily constructed. Cox & Stevens, 15 William St., New York.



No. 1796—For Sale or Charter—Very roomy, twin screw cruising power yacht, 99 x 17 x 4 ft. Speed 13 to 15 miles; Standard motors. Large dining saloon, six staterooms, three bathrooms, all conveniences. Cox & Stevens, 15 William St., New York.



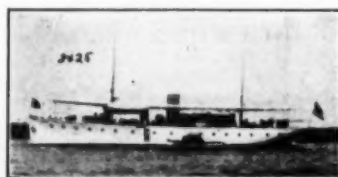
No. 1526—For Sale or Charter—Twin-screw cruising power yacht; 107 x 18 x 5.3 ft. Speed 11-12 knots; 75/90 H.P. Standard motors. Four staterooms, deck dining saloon, bath and two toilets, etc. Recently completely overhauled at large expense. Cox & Stevens, 15 William Street, New York.



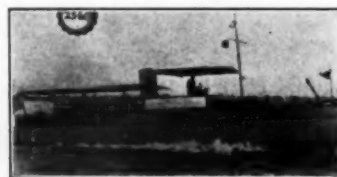
No. 2026—For Sale—Twin-screw cruising power yacht; 75 x 14 x 6 ft. Speed 12 miles; two 60 H.P. motors. Two staterooms, saloon, bath and toilet room, galley, etc. Price attractive. Cox & Stevens, 15 William Street, New York.



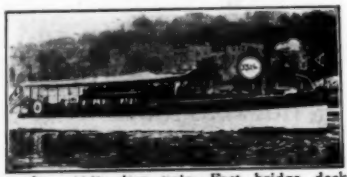
No. 3427—For Sale at Low Figure—Fast, roomy, twin screw cruising power yacht; 74 x 14 x 3.9 ft. New 1916; Lawley built. Speed up to 16 miles; two 6 cyl. "Speedway" motors. Large saloon, three staterooms, shower bath, etc. Cox & Stevens, 15 William Street, New York.



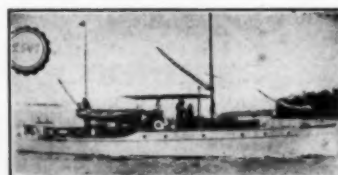
No. 2425—For Sale or Charter—Twin screw cruising power yacht; 90 x 16.6 ft. Speed up to 12½ miles; two 6 cyl. 60/90 H.P. motors. Excellent accommodation. Now in commission. Cox & Stevens, 15 William Street, New York.



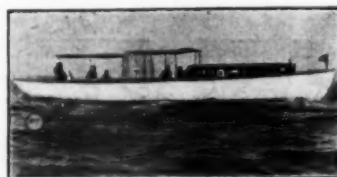
No. 2560—For Sale—Fast, V-bottom, twin screw power cruiser; 60 x 13 x 3 ft. Built 1917. Speed up to 18 miles; two 6 cyl. Sterling motors. Double stateroom forward; roomy saloon aft with separate galley; two toilet rooms (one with Sitz bath). Low price for quick sale. Cox & Stevens, 15 William Street, New York.



No. 3326—For Sale—Fast bridge deck cruiser; 55 x 8.9 x 3 ft. Speed up to 23 miles; 8 cyl., 200 H.P. Speedway motor. Two berths in cabin, toilet room, large cockpit, etc. Price attractive. Cox & Stevens, 15 William St., New York.



No. 2547—For Sale—Handsome, modern, exceptionally able gasoline cruiser; 64 x 12.6 x 4 ft. Speed 11½ miles; 60 H.P. 6-cylinder heavy duty motor controlled from bridge. Main saloon, toilet and separate galley forward; engine room amidships; double and single stateroom and bathroom aft. Cox & Stevens, 15 William St., N. Y.



No. 627—For Sale—Attractive Lawley Built Day Boat, 54.5 x 10.3 x 3 ft. Speed 11 miles; 32/37 H.P. Standard motor. Best construction. Sleep 4 comfortably. Large cockpit. Low price. Cox & Stevens, 15 William St., New York.



No. 3560—For Sale—Fast Bridge deck cruiser; 45 x 10.6 x 3.6 ft. New 1917. Speed 18 miles; 125 H.P. 6 cyl. Sterling motor. Double stateroom, saloon, galley, toilet room, etc. Price reasonable. Cox & Stevens, 15 William Street, New York.

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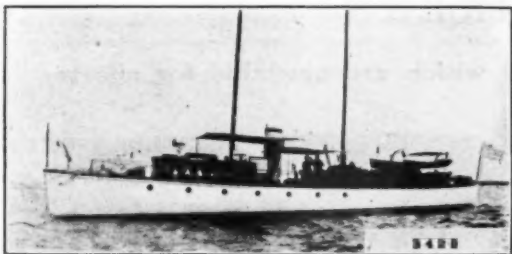
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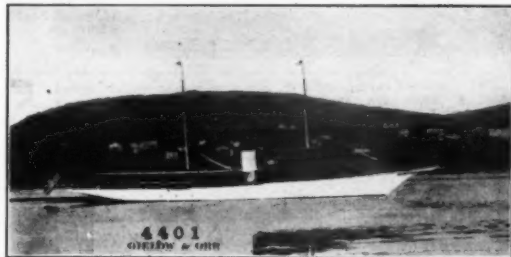
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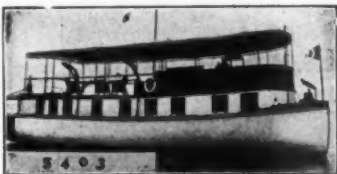
We have a most complete and up-to-date list of power yachts of all sizes, sail, auxiliary and houseboats on file in our office, kept constantly up-to-date by a thorough and comprehensive canvas of the entire yachting field from time to time. We are in a position to submit full information on any type of boat upon request. FOR SOUTHERN CRUISING this winter we offer a number of very desirable POWER HOUSE BOATS and POWER YACHTS which are specially adapted for FLORIDA waters.



No. 3422—For Sale—Desirable 94 foot twin screw steel power yacht. Deck dining room. Two double staterooms, bath and two toilets. Hot water heated. Standard engines. Speed 12 to 14 miles. Price reasonable. Gielow & Orr, 52 Broadway, New York City.



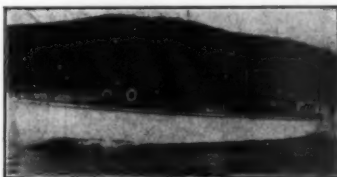
No. 4401—For Sale—137 ft. very attractive twin screw motor yacht. Speed 15 to 16 miles. Built by Lawley. Deck dining room and smoking room. Three double staterooms. Hot water heated. Price attractive. Gielow & Orr, 52 Broadway, New York City.



No. 5403—For Charter—Desirable 51 foot houseboat. Standard Motor. Large deck space. Two double and two single staterooms. Electric lights. Accommodations for seven persons. Gielow & Orr, 52 Broadway, New York City.



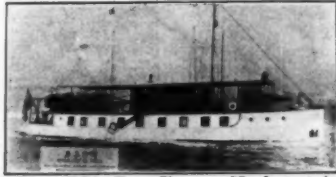
No. 2680—For Sale—Attractive 75 foot power yacht. Practically in commission. Two staterooms with double beds. Bathroom. Standard engine. Speed 12 miles. Able sea boat. Inspectable New York. Gielow & Orr, 52 Broadway, New York City.



No. 3307—For Sale—Desirable 59 foot cruising power yacht. Standard engine. Double stateroom. Good sea boat, inspectable New York, price attractive. Gielow & Orr, 52 Broadway, New York City.



No. 2958—For Sale—Twin screw 120 foot steam yacht. Speed up to 24 miles. Deck dining room. Built by Seabury. Suitable for ferry or racing yacht tender. Gielow & Orr, 52 Broadway, New York City.



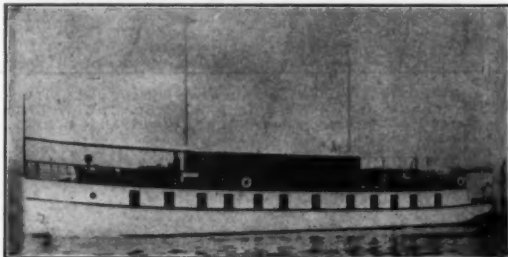
No. 5376—For Charter—77 foot twin screw power houseboat. Standard engines. All conveniences. Two double, and two single staterooms. Two bathrooms. Large deck house. Gielow & Orr, 52 Broadway, New York City.



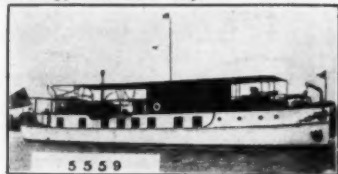
No. 5195—For Sale—Very attractive 65 foot motor yacht. Speed 12 miles. Two double staterooms. Ready to go in commission; excellent condition. Price attractive. Gielow & Orr, 52 Broadway, New York City.



No. 5880—For Sale—Most commodious 107 foot cruising houseboat. Built 1917. Luxuriously furnished. Two double and four single staterooms. Three bathrooms. Hot water heated. New electric plant. Now in commission. Gielow & Orr, 52 Broadway, New York City.



No. 5006—For Charter—Desirable twin screw 100 foot cruising houseboat. Speed 12 miles. Deck dining room and lounging room. Seven staterooms, three bathrooms. Now in commission. Gielow & Orr, 52 Broadway, New York City.



No. 5559—For Sale or Charter—Attractive 75 foot cruising houseboat. Standard engines. Deck lounging room. Three double and one single staterooms. Bathroom. Now in Florida. Gielow & Orr, 52 Broadway, New York City.



No. 6367—For Sale or Charter—New cruising houseboat similar appearance to photo. 55' x 15' x 3' for Florida cruising; new 6 cylinder Lamb engine. Speed 9 miles. Owner's large double stateroom and large main saloon. Deck house 8' x 8'. Mahogany trim. Shower bath. Crew stateroom—2 men and toilet. Purchaser can furnish boat to suit own ideas. Best boat size and type available. Price reasonable. Gielow & Orr, 52 Broadway, New York City.



No. 6228—For Sale—31 feet Hand express Cruiser. Built 1917 Van Blerck Motor. Speed 20 miles. Able sea boat. Price attractive. Gielow & Orr, 52 Broadway, New York City.

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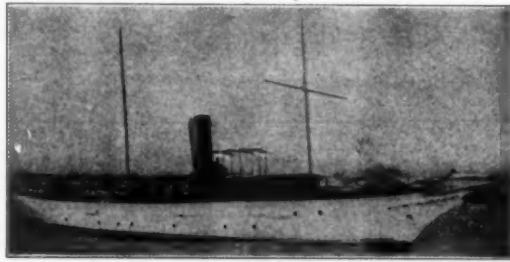
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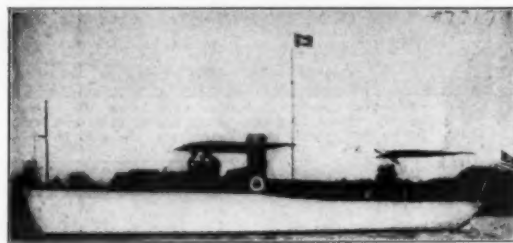
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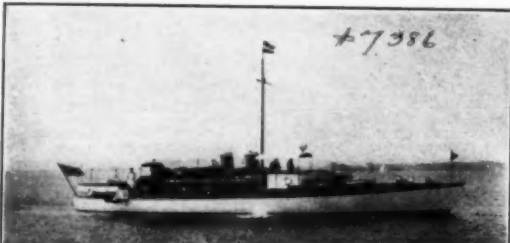
No. 51—For Sale—Price Attractive—Steam yacht. 115 ft. x 95 ft. x 15 ft. 6 in. x 5 ft. 5 in. draft. Built 1903. Triple Expansion Engines, Seabury Boiler, new 1913. 4 staterooms and two saloons.



No. 7987—Sale—Charter—106 ft. cruising motor yacht; speed. 13 knots; 4 staterooms, bathroom, main saloon, deck dining saloon, etc. Full equipment.



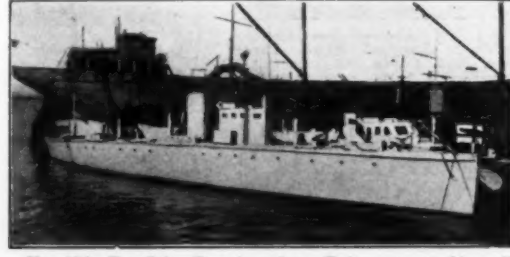
No. 7717—Sale—Charter—Raised Deck Cruiser, 60 ft. x 11 ft. x 3 ft. 6 in. 50 H.P. Speedway motor. Saloon, stateroom, galley, etc.



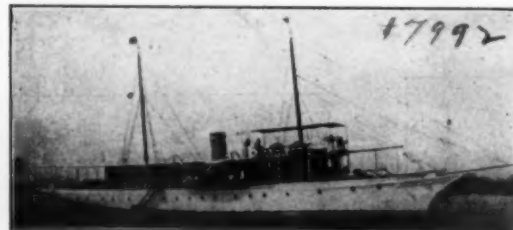
No. 7386—For Sale—Price attractive. 75 foot motor yacht, 6 cylinder 100 H.P. Standard motor. Good cabin accommodations.



No. 7001—Sale Desirable shoal draft cruiser, 33 ft x 10 ft. 6 in. x 2 ft. 6 in. draft. Built 1917, 25 H.P. Sterling motor. Speed 12 miles.



No. 184—For Sale—Bargain price. Twin screw turbine oil burning patrol boat. Just completed. 113 ft. 6 in. x 16 ft. x 6 ft. 5 in. draft. Make ideal yacht with minor alterations.



No. 7992—For Sale—Modern steel motor yacht, 115' 7" x 17' x 3' 3" draft. 2—100 H.P. Standard motors. Speed 15 miles. Commodious owners' quarters.



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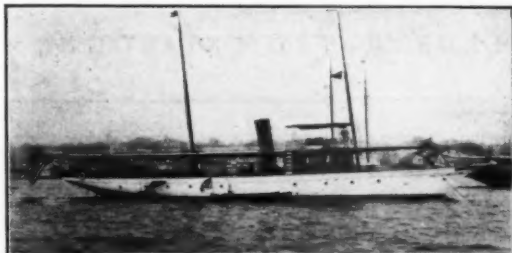
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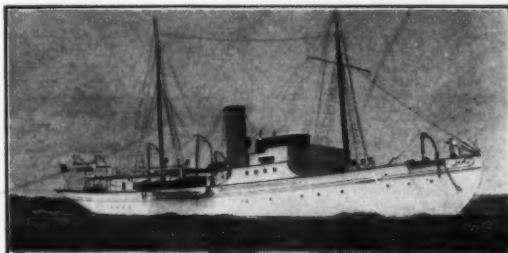
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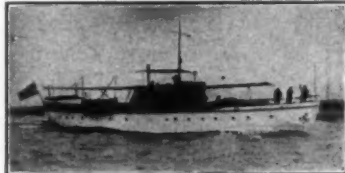
No. 2093—For Sale—Power cruiser, 75 ft. x 14 ft. x 4 ft. 6 in. Sterling engine. Deck dining saloon, large main saloon, two state rooms, bathroom, etc.



No. 2334—For Sale—New twin screw express cruiser, 85 x 14.3 x 4.3. Van Blerck engines. Speed up to 21 miles. Reasonable price.



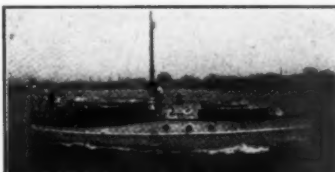
No. 2437—For Sale—Power boat, 39' x 11' x 3' 6". Equipped with four cylinder Standard motor. Price reasonable.



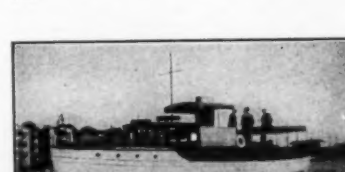
No. 1736—For Sale—Twin screw power yacht, 97 ft. x 16 ft. 7 in. x 3 ft. 6 in. 4 staterooms, bath room, deck dining saloon, etc.



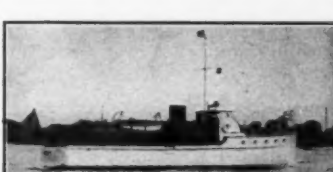
No. 2167—For Sale—Power boat, 50 ft. x 11 ft. x 3 ft. 6 in. Fitted with Sterling engine. Large accommodation.



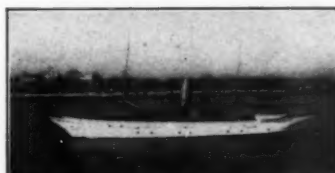
No. 1458—Raised deck cruiser, with bridge, 50 ft. x 11 ft. x 3 ft. 9 in.; fitted with 50 H.P. Ralaco motor; speed, 10 knots; sleeps 4 in Owner's party; Galley two toilets, etc.



No. 1914—For Sale—Raised deck and cabin house cruiser, 50 ft. x 10 ft. x 4 ft. 50 H.P. motor. Price low.



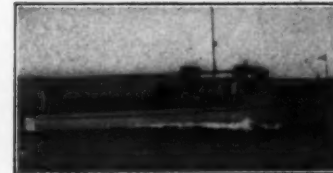
No. 2386—New Patrol type, 54 ft. x 11 ft. 2 in., eight cylinder Van Blerck, speed 17 miles.



No. 1586—For Sale—Power yacht—106' x 13' 6" x 6'. Equipped with Standard engine. Has deck dining saloon, four staterooms, bath room, etc.



No. 1738—Raised Deck Cruiser, 65 ft. x 11 ft., six cylinder motor. good accommodation.



No. 2351—For Sale—58-Foot Twin Screw Express Cruiser. Has 2 staterooms, galley, etc. Two 200 h.p., each 8-cylinder Van Blerck engines; speed 25 to 27 miles.

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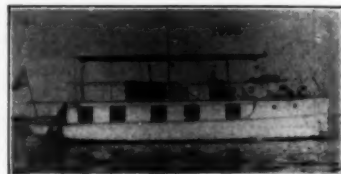
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2072—40 foot Elco cruiser. Stateroom, main cabin and engine room sleeps six people. Two toilets. Standard motor. Speed 10 miles.



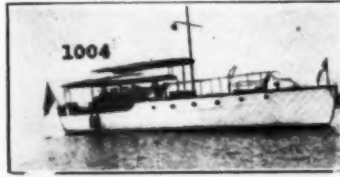
1443—110 foot twin screw power yacht. Five staterooms, dining saloon, baths, etc. Speed 11-12 knots.



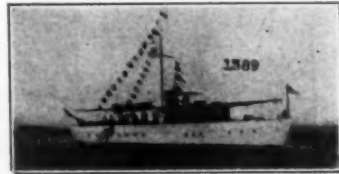
1998—Charter 43 foot Mathis houseboat cruiser. Double stateroom and main cabin sleeps six. Speed 8-9 miles.



4225—Sale or charter. 50 foot power houseboat. Three staterooms, main saloon, etc. 32-37 Standard motor. Speed 8 miles.



1004—60 foot cruiser. Two staterooms, three berths in main cabin. 40 H.P. motor. Speed 11 miles. Price attractive.



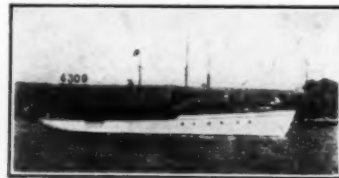
1389—90 foot twin screw power yacht. Three staterooms, main saloon, bath, etc. Speed 12-14 miles.



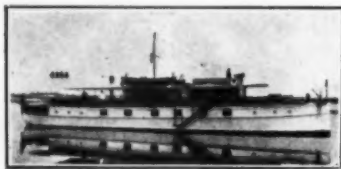
1421—130 foot steam yacht. In commission. Five staterooms, bath, dining saloon, smoking room, etc. Speed 10-12 knots. Can be bought for \$7,500 for quick sale.



2040—70 foot twin screw power yacht. Three staterooms. Dining saloon, bath, etc. Speed 13-14 miles.



4309—Sale or charter 100 foot steam yacht. Two double staterooms, main saloon, dining saloon, etc. Speed 13 miles.



4258—107 foot power houseboat. Six staterooms, four baths. Dining saloon, living room, etc. Speed 9 miles.



2056—Twin screw steel power yacht. 115' x 17' x 5' 3". Four staterooms, dining saloon, social hall, baths, etc. Speed 12-15 miles.



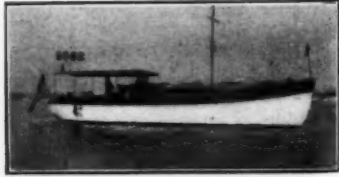
4231—Sale or charter. 85 foot power houseboat. Five staterooms, baths, dining saloon, etc. Speed 10-12 miles. Located Florida waters.



4087—Twin screw power houseboat, 70' x 18' 6" x 1' 10". Three double staterooms, main saloon, bath, etc. Two Sterling motors. Speed 10 miles.



3932—65 foot power houseboat. Four staterooms, bath, dining saloon, social hall, etc. Speed 8 miles. Located in Florida waters.



2062—42 foot cruiser. Double stateroom and main cabin sleeps four people. Toilet room, galley. Electric lights, searchlight, etc. Speed 10 miles.

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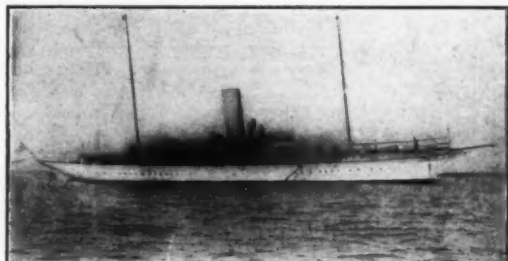
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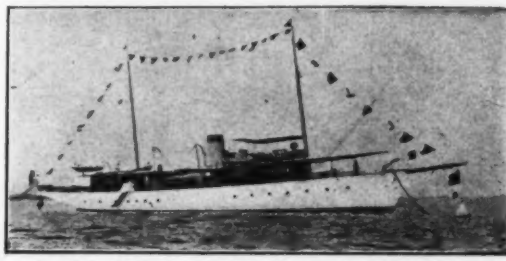
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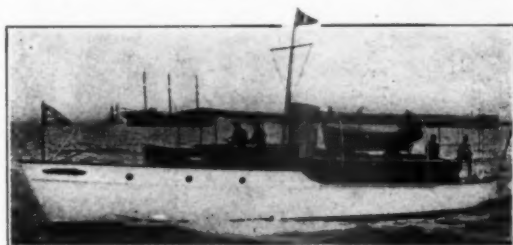
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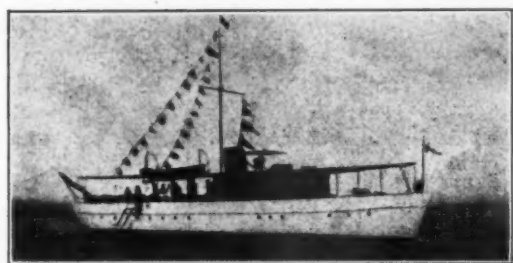
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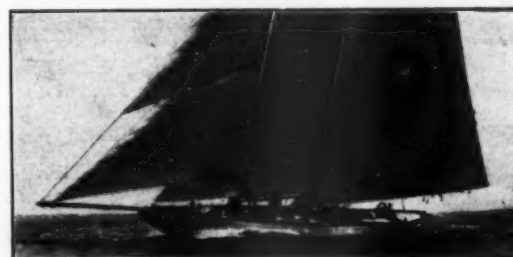
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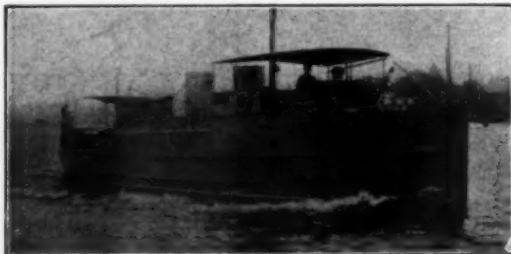
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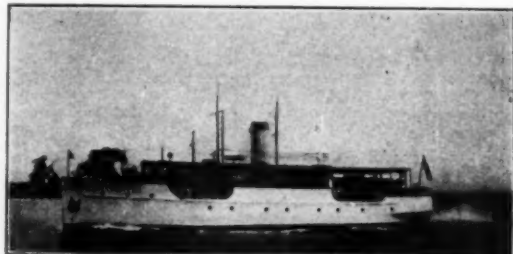
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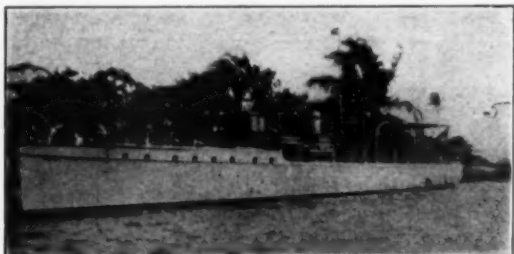
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No. 353—55' Cruiser, with practically new Sterling motor. Price attractive.



No. 880—50' Great Lakes Express Cruiser. Sleeps 8 persons. Speed 18-20 miles.



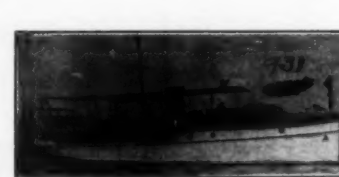
No. 619—110' Houseboat, in Southern waters. Comfortable accommodations for 12 persons.



No. 337—43' Cruiser. Sleeping accommodations for 6 persons. Speed 12 miles.



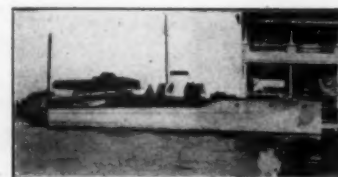
No. 614—Houseboat, 51' in length. 1 single, 2 double staterooms. Speed 8 miles.



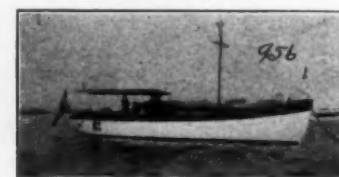
No. 931—65' Cruiser. Sleeping accommodations for 7 persons. 1 bath. Speed 11 miles.



No. 10—57' Passenger Vessel, licensed to carry 70 people.



No. 844—40' Bridge Deck Cruiser. Speed 14 miles. Very attractive boat.



No. 752—36' Palmer Cruiser. Sleeps 4 persons. Speed 11 miles.

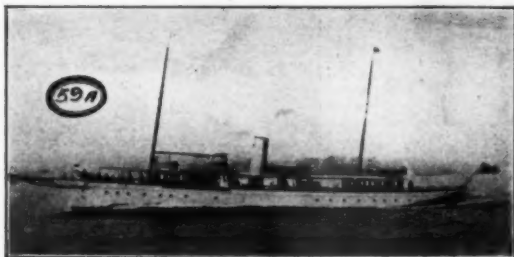
EDWARD P. FARLEY CO.,

Railway Exchange Bldg., Chicago, Ill.
Telephone Har. 1343

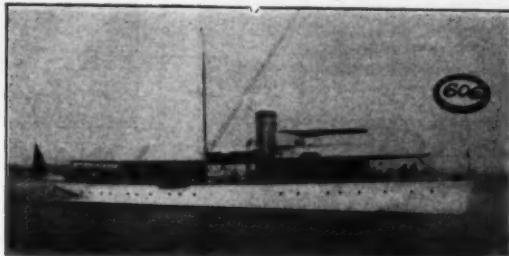
Naval Architects, Yacht Brokers, Surveying, Marine Insurance

We have a complete list of all Steam and Power Yachts, Auxiliaries and Houseboats which are offered for sale and charter.

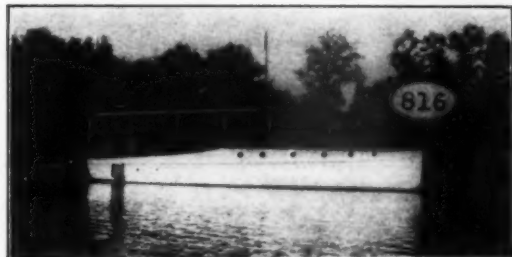
Plans, Photographs and full particulars furnished on request.



No. 59a—For Sale—170' Steel Steam Yacht. Six double staterooms, large dining saloon and social hall on deck. Triple expansion engine. Speed up to sixteen miles. Excellent condition.



No. 606—For Sale—Modern Steel Steam Yacht. 23' x 17' x 6' draft. Speed up to sixteen miles. Three single and two double staterooms. Dining and social hall on deck. In excellent condition throughout. The finest yacht of her size available.



No. 816—For Sale—45' Bridge deck cruiser. Heavily built. Two double staterooms. Sterling motor. A modern boat throughout. Now in commission on Great Lakes.



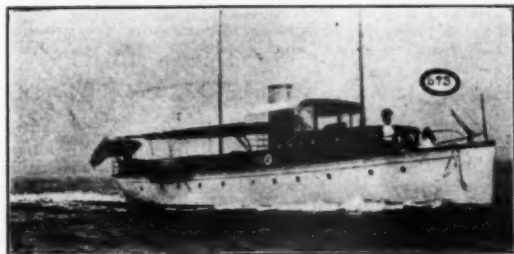
No. 116—For Sale—Twin screw steel steam yacht. 227 ft. x 24 ft. 6 in. x 10 ft. draft. Five single and two double staterooms. Four bathrooms. Two deckhouses containing dining saloon and social hall. Speed up to 22 knots.



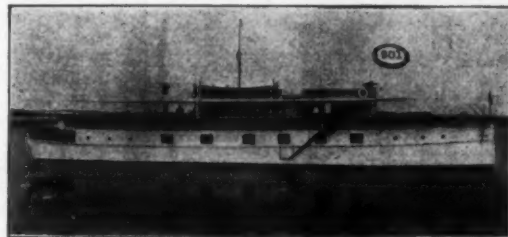
No. 891—For Sale—138 ft. steel steam yacht. 17' 6" beam, 7' 6" draft. Two double, two single staterooms, two baths and toilets. Dining saloon and social hall on deck. Fittings throughout of the very best. New boilers and engine in 1916. In excellent condition throughout.



No. 871—For Charter—60' x 17' x 3' Power Houseboat. Living quarters very well arranged and excellently furnished. All modern conveniences. Boat now in Florida waters and available for part of winter season.



No. 573—For Sale—85' Twin screw cruiser. Winton motors. Speed up to 14 miles. Built in 1916. Dining saloon on deck. Five staterooms, etc. Attractively furnished and in excellent condition throughout.



No. 901—For Sale—107' Houseboat cruiser. Built in 1918. Luxuriously furnished. Two double and four single staterooms. All modern conveniences.

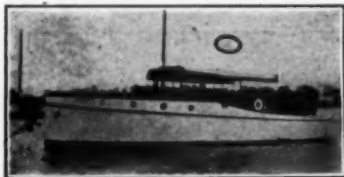
THE MOTOR BOATING MARKET PLACE

The rate for "For Sale" and "Want" advertisements is 3 cents per word, minimum 75 cents. If an illustration is used, the charge is as follows, which includes the making of the cut:

Cut one inch deep, one column wide..... \$3
Cut 1 1/4 inches deep, 1 1/2 columns wide..... \$5
Cut 2 1/4 inches deep, three columns wide..... \$15

Opportunities for the Motor Boatman

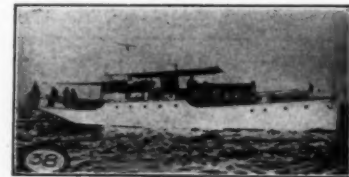
Before you buy or before you sell examine the exceptional buying and selling opportunities under this heading. They comprise the best offer of the month. Please mention MoToR BoatinG.



No. 106—For Sale—40 ft. power yacht. One double stateroom, dining saloon, galley, two toilets. Speedway self-starting motor. Low price. E. P. Farley Co., Railway Exchange Bldg., Chicago, Ill.



No. 532—For Sale—71 ft. twin screw, flush deck motor yacht. Built by Seabury. Able seaboat. Excellent condition throughout. E. P. Farley Co., Railway Exchange Bldg., Chicago, Ill.



No. 38—For Sale—78' Power yacht. Lawley built. Two double staterooms. A very able seaboat. E. P. Farley Co., Railway Exchange Bldg., Chicago, Ill.



No. 413—For Sale—85' twin screw steel gasoline yacht. Two double, one single staterooms, also bathroom. Speedway motors. An excellent seaboat and comfortable cruiser. E. P. Farley Co., Railway Exchange Bldg., Chicago, Ill.



No. 477—For Sale—58' twin screw express cruiser. Built 1917. Beautifully finished and furnished. Two double staterooms. Two eight cylinder Van Blerck engines. Speed up to 27 miles. E. P. Farley Co., Railway Exchange Bldg., Chicago, Ill.

BARGAINS

BARGAINS

EAGLE TWO CYCLE ENGINES

We purpose to close out at greatly reduced prices our entire stock of "Eagle" two cycle engines, as we intend to discontinue the manufacture of this type of engine in the future. Write at once for information to the

TORRINGTON COMPANY STANDARD PLANT

Torrington, Conn.

YACHTSMEN, ATTENTION!

Beautiful 3-acre Bay-front Estate on Biscayne Bay, near mouth of Miami River, at
MIAMI, FLORIDA.

Within half-mile of heart of City; 10-room handsome old dwelling; beautiful grounds, rare fruit trees and ornamental tropical shrubbery. Most ideal and picturesque Bay-front estate within miles of Miami. Water 5 to 10 ft. deep close to shore. Splendid year-round home for yachtsman. Price \$110,000.

209 ft. frontage on Miami River, Miami, Fla., nearly two acres of ground. Near mouth of River; no draws to pass. Ideal location for marine ways, boat-yards, machine shops, marine contractors and wreckers, ship-chandlery and yacht-supply stores. Price \$50,000.00 with improvements. Reasonable terms. Miami's growing harbor facilities demands these enterprises. No marine wrecking outfit on coast between Jacksonville and Key West.

We specialize in water-front properties. Write us.

WATERS REALTY COMPANY,
San Carlos Hotel Bldg., Miami, Florida.

For Sale—Bargain—Cruising houseboat, 40 x 11, engine 18 H.P. Suitable for Southern cruising. Price, \$1,000. R. Henderson, Surf Ave. and West 37th St., Brooklyn, N. Y.

Wanted position as Captain of gasoline yacht by capable, energetic and educated man—34 yrs. of age. Experienced in construction, repairs, upkeep, general shipyard and marine railway work and in handling all kinds of gasoline and sailing craft. Familiar with inside route from Boston to Key West, and to New Orleans. Long Island Sound; New York Waters; Hudson River; Lake Champlain; St. Lawrence River to Quebec; Montreal; Thousand Islands; Lakes Ontario, Erie; Canadian Canal System and New York State Canals. Know Florida waters thoroughly, including St. Johns River, also experienced in Florida Reef fishing. Can assure efficient services to anyone desiring capable man. State salary and probable length of employment. Address Box 19, c/o MoToR BoatinG.

Wanted:—to buy motor boat about 25 feet long, without cabin, driven and controlled like an automobile with all seats facing forward. Give full particulars and send picture if feasible. Address P. O. box 103, Norfolk, Va.

The *PRACTICAL* Hand-Books!

A really complete and comprehensive library covering every phase of motor boating. These books are edited by Charles F. Chapman, M. E., the editor of MoToR BoatinG, and are the results of months of untiring effort on his part, together with the best of thousands of suggestions sent to him by motor boatmen themselves.

Practical Motor Boats and Their Equipment

Volume 1.—What the ideal boat for various kinds of service should be and what to look for in buying a boat. Many suggestions about decoration and hints on all kinds of equipment.

Practical Motor Boat Building

Volume 2.—Takes up the building of your own boat. It also covers the construction of the necessary fittings such as awning, windshield, etc.

Practical Things Motor Boatmen Should Know

Volume 3.—Navigation is one of the important subjects covered in this volume. The chart and compass are both fully explained in a clear and comprehensive manner.

Practical Marine Motors

Volume 4.—All about the marine motor; what it should and should not be. The best location for your engine, the ideal engine bed, the fuel tank, exhaust and countless other suggestions.

Practical Motor Operation and Maintenance

Volume 5.—Your motor's ills and how to cure them. How to adjust your carburetor, how to fit piston rings, how to remedy poor compression and a number of other things that will enable you to doctor your own motor.

Practical Suggestions for Handling, Fitting Out and Caring for the Boat

Volume 6.—Whether you are a beginner or a finished expert this book will give you a better knowledge of the handling of your craft.

Price \$1.25 Per Volume or \$6 per set of six volumes of over 1,000 pages.

The books measure 7 x 10 inches and are handsomely bound in cloth. Each volume is fully illustrated and printed in clear type on fine paper.

MoToR BoatinG

119 West 40th St.

New York

THE MOTOR BOATING MARKET PLACE

The rate for "For Sale" and "Want" advertisements is 3 cents per word, minimum 75 cents. If an illustration is used, the charge is as follows, which includes the making of the cut:

Cut one inch deep, one column wide..... \$3
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Opportunities for the Motor Boatman

Before you buy or before you sell examine the exceptional buying and selling opportunities under this heading. They comprise the best offer of the month. Please mention MoToR BoatinG.

SALE OF 20 NAVY CRUISING MOTOR BOATS

20 SUBMARINE CHASERS—110 feet long, 660 I. H. P., equipped with 3-220 I. H. P. six cylinder, heavy duty, gasoline engines, many with radio, will be sold by sealed proposals, receivable at the bureau of Supplies and Accounts, Navy Department, Washington, D. C., until 12 o'clock noon, 8 October, 1919:

Sub-Chasers Nos. 106, 240, 97, 247 and 269, now in 1st Naval District, Boston, Mass.
Sub-Chasers Nos. 235, 238, 250, 19, 239, 21 and 25, now in 3rd Naval District, New York, N. Y.

Sub-Chasers Nos. 73 and 430, now in 4th Naval District, Philadelphia, Pa.

Sub-Chasers Nos. 24 and 184, now in 5th Naval District, Norfolk, Va.

Sub-Chasers Nos. 61, 89 and 79, now in 6th Naval District, Charleston, S. C.

Sub-Chaser No. 283, now in 15th Naval District, Panama Canal Zone.

Exact location may be ascertained from the Commandant of the District concerned, and should be obtained before making trips for inspection. Sales will be for cash to the highest bidders. 10% deposit required with bid. Right to reject all bids reserved. Forms of proposal, information concerning the vessels, and the terms of sale obtainable from bureau of Supplies and Accounts, or Commands for above districts. JOSEPHUS DANIELS, Secretary of the Navy. 9-8-19

SALE OF U. S. NAVAL VESSEL, MOTOR YACHT "JESSAMINE." Sealed Proposals will be received at the Bureau of Supplies and Accounts, Navy Department, Washington, D. C., until 12 o'clock noon, 1 October, 1919, when they will be publicly opened for the purchase of the U. S. S. MOTOR YACHT JESSAMINE, now at Detroit, Mich. Exact location may be ascertained from the Commandant, Ninth Naval District, Naval Training Station, Great Lakes, Ill., and should be obtained before making trips for inspection. Appraised value \$8,000.00. The sale will be for cash to the bidder offering the highest price, NAVY reserving the right to reject all bids. Forms of proposal and bond, and information concerning the vessel, and the terms and conditions of sale, may be obtained upon application to the Bureau of Supplies and Accounts. JOSEPHUS DANIELS, Secretary of the Navy. 9-2-19.

Wanted—Best 30 or 40 H.P. medium duty marine engine that three hundred dollars cash will buy. Ernest F. Merrow, Hyde Park, Mass.

NEW AND USED AIRPLANE MOTORS

Use an airplane motor
in your boat
More Power and Speed
Less Gasoline and
Weight

Airplane Motors, 30 to 300 H.P.
Lowest Prices.

Send for Bulletin "MG"

U.S. AERO EXCHANGE

IN HARRIS ROW
NEW YORK CITY

Trimount

Whistle Blower Outfits
Blower runs by friction
contact with engine fly-
wheel. Whistle of brass,
nickel-plated.

Made in 3 sizes.

TRIMOUNT ROTARY POWER CO.

20 Heath Street

(Factory: 232 Whiting Ave., East Dedham, Mass.)

Trimount

Rotary Hand Bligs
Pumps

All bronze composition.
Suction lift 6 to
20 feet. A lifelong
convenience.

Made in 3 sizes.

SALE BY NAVY 16 MOTOR AND STEAM CRUISING-SEA GOING YACHTS.

There will be sold by sealed proposals receivable at the bureau of Supplies and Accounts, Navy Department, Washington, D. C., until 12 o'clock noon, 20 October, 1919—Motor Yachts, DAI-QUIRI, ESTELLA, ADMIRAL II, WACHUSETT, ACTUS, now in 1st Naval District, Boston, Mass. Motor Yachts, ARCTURUS, WEMDOTAH, NAUCHON, ATLANTIS, now in 3rd Naval District, Brooklyn, N. Y. Motor Yacht, MAGGIE, now in 5th Naval District, Hampton Roads, Va. Motor Yachts, RONDO, HETMAN, and RUSS, now in 7th Naval District, Key West, Fla. Motor Yachts, SISTER, NAJELDA, now in 8th Naval District, New Orleans, La. Motor Yacht, COYOTE, now in 9th Naval District, Great Lakes, Ill. Exact location may be ascertained from the Commandant of the District concerned, and should be obtained before making trips for inspection. Sales will be for cash to highest bidders. 10% deposit required with bid. Right to reject all bids reserved. Forms of proposal, information concerning the vessels, and the terms of sale obtainable from bureau of Supplies and Accounts, or Commandants of above districts. JOSEPHUS DANIELS, Secretary of the Navy. 9-6-19.

Wanted—Would like to hear from party going to Florida about Dec. 1st to pilot 45 ft. Standard equipped, bridge deck cruiser. Must be thoroughly familiar with inside route. References required. W. A. Davis, care Capital Yacht Club, Washington, D. C.

USE "SNAPPER" ENGINES for your small boat. They are a big little engine built by The Automatic Machine Co., Bridgeport, Conn.

CANADIANS, Second-hand engine bargains. Send for list.

GUARANTEE MOTOR COMPANY

73 Bay Street, North Hamilton, Ont., Canada

BOSCH MAGNETOS—All types \$15.00 each and up—Coils: Remy-Splittorf—Delco and other types \$5.00. Low Tension Magnets all models \$5.00 each and up. Presto Tanks \$5.00—Lighting Generators \$9.00. Starters. Carburetors. Switches. Steering Wheels, etc. Auto Motors, both water and air cooled all sizes. Write for late bargain bulletin second-hand Auto material suitable for all purposes. Johnston, West End, Pittsburgh, Pa.

A few medium and high speed, one, two, four and six cylinder, four-cycle marine motors, new or rebuilt. Reliance Motor Boat Co., 310th Street and Harlem River, New York City.

FOR QUICK DELIVERY, at low prices, high grade, heavy duty, marine crude oil engines of 40, 60, 75, 85, 112 and 150 B. H. P. Recent changes in owner's plans makes these engines available. Jacobson Engineering Co., 5 Second Ave., Rensselaer, N. Y.

FOR SALE—One Kermath Moreton 4 cyl. engine. Bargain. M. & M. Machinery Co., Boothbay Harbor, Maine.

One cyl. Two cycle.
1 1/2 H.P. Pierce\$19.
2 H.P. American and propeller 30.
3 H.P. Perry 30.
3 1/2 H.P. Eclipse 35.
4 H.P. Gray and propeller 50.
4 H.P. Gray, propeller and gear 55.
6 H.P. Gray 65.
6 H.P. Termaat - Monohull 50.
9 H.P. Fox 70.
10 H.P. Truscott 75.

Also large line of auto motors, stationary and tractor engines. Supplies of every nature at very low prices.

Two cyl. Two cycle
7 1/2 H.P. Fairbanks-Morse and gear.....\$85.
10 H.P. Wisconsin 95.
12 H.P. Gray gear and propeller155
18 H.P. Vim and gear. 95.
18 H.P. Fairbanks-Morse three cyl. 4 1/2 x 4 1/2 with Baldridge gear245.

Four Cycle Engines
8 H.P. Dunn two-cyl. new \$70.
20 H.P. Ford four cyl. Model T, new with governor control. 135.
20 H.P. Hupmobile unit plant four cyl. with Bosch magneto. 65.
25 H.P. Mitchell four cyl. 55.
30 H.P. Regal " " 65.
30 H.P. Reo " " 70.
40 H.P. Racine " " 85.
50 H.P. Mitchell six cyl. 95.

SALE OF U. S. NAVAL VESSELS. FIVE MOTOR YACHTS, BARGE AND FREIGHT LIGHTERS will be sold by sealed proposals receivable at the bureau of Supplies and Accounts, Navy Department, Washington, D. C., until 12 o'clock noon, 15 October, 1919, including MOTOR YACHTS, SHREWSBURY, now in 4th Naval District, Philadelphia, Pa., SHARK and SHUR, now in 1st Naval District, Boston, Mass., JEANETTE, now in 6th Naval District, Charleston, S. C. MOTOR YACHT, MARIE, BARGE, MIFFLIN and FREIGHT LIGHTER, SUCCESS, now in 3rd Naval District, Brooklyn, N. Y. Exact location may be ascertained from the Commandant of the District concerned, and should be obtained before making trips for inspection. Sales will be for cash to highest bidders. 10% deposit required with bid. Right to reject all bids reserved. Forms of proposal, information concerning the vessels, and the terms of sale obtainable from bureau of Supplies and Accounts or Commandants of above districts. JOSEPHUS DANIELS, Secretary of the Navy. 9-5-19

FOR SALE:—6 cylinder 45-65 H.P. Unit Plant with electric starter Sterling; 6 cylinder 114 to 190 H.P. Loew-Victor Unit Plant; 30 H.P. Heavy Duty T & M Unit Plant; 4 cylinder 10-12 H.P. Buffalo Unit Plant; 3, 8 and 15 H.P. Ferro; 24 H.P. Model "T" Gray; 10-12 H.P. Detroit; 10-12 H.P. 4 cylinder Morton; 25-30 H.P. 4 cylinder Continental \$150.00; 24 H.P. Kalenberg; 2 cylinder 12 H.P. and 3 cylinder 18 H.P. Heavy duty 4 cycle Unit Plant Monarch; and 60 more 1 1/2 H.P. and up Marine, Stationary, Truck and Auto Motors. Send for complete list. Jesiek Boat Company, Grand Rapids, Mich.

FOR SALE—One Brand new Kemp Machine Works—Aerial engine, Model 1-4, complete, has never been used. Address 100, care MoToR BoatinG.

FAST SIMPLEX RUNABOUT, 39 feet. Selected Cedar and Mahogany. Natural Finish. Close Ribbed. Copper Fastened. Simplex Marine Motor 90 H.P. 30 miles, \$1,500.00 Net. Cash. Bargain; J. P. Randerson, Diamond Point, Lake George, N. Y.

Don't discard your old Tires use self cured Blow-out Patches. They weld permanently. Extra long and strong. Easily applied. Double mileage assured. The outcome of years of research, send for particulars Ben's Big Tire Shop, Dept. S, 378-382 Queens Boulevard, Winfield, Long Island.

UP-TO-DATE CRUISER WANTED—Late design bridge deck cruiser, 60 to 70 ft. long, must be in good running condition. Boat at present in commission preferred. Send picture, state make of engine, draft, beam, age and price. Also if boat can be inspected, if so, where. Motor Boating, Box 30.

FOR SALE:—22 foot motor boat with 4 cylinder Universal Engine—brass finishings everywhere, with spray hoods and fully equipped, practically new, run less than 3 hundred miles. Write: Box 4 MoToR BoatinG.

WANTED:—By present employer a job for his boatman for the winter—is a good sailor and handy, understands simple cooking and can operate gasoline engines. Address present employer R. E., Room 1200 Otis Bldg., Chicago, Ill.

NAVAL ARCHITECTS & YACHT BROKERS

Thomas D. Bowes, M. E.
NAVAL ARCHITECT AND ENGINEER

Offices:

Lafayette Bldg., Chestnut and Fifth Sts.
PHILADELPHIA, PA.

COX & STEVENS

Engineers and Naval Architects
Yacht Brokers

15 WILLIAM STREET, NEW YORK CITY
TELEPHONE 1375 BROAD

THE EDWARDS ENGINEERING CO.
NAVAL ARCHITECTS & ENGINEERS
DESIGNERS OF
OIL ENGINED YACHTS
AND
COMMERCIAL VESSELS
15 SO. 7TH ST. PHILADELPHIA, PA.

ELLIOTT GARDNER
NAVAL ARCHITECT
288 ATLANTIC STREET, STAMFORD, CONN.
UP TO DATE DESIGNS

Build a real boat that you will be proud of. Boats designed by Gardner need no other recommendation. Complete plans and full size patterns furnished. Fast V-bottom boats a specialty. Hydroplanes, Auxiliaries and Sea-going Cruisers. Fast 20 ft. runabout designed for Ford Auto Engine. Blue Prints on request.

William H. Hand, Jr.
NAVAL ARCHITECT
NEW BEDFORD, MASS.
HAND-V-BOTTOM DESIGNS
Write for 48-page illustrated catalog

FREDERICK K. LORD
NAVAL ARCHITECT
120 BROADWAY NEW YORK

CHARLES D. MOWER

Designer of
SENSIBLE CRUISERS
POWER—SAIL—AUXILIARY

Twenty-five years' practical experience

Temporary address:
Care of Dussenberg Motor Corp.
120 Broadway New York City

FREDERICK S. NOCK
Naval Architect and Yacht Builder
Marine Railways, Storage, Repairs
East Greenwich, Rhode Island

Gar, Jr.

(Continued from page 13)

that he has actually used his Gar, Jr., to cruise many thousands of miles in. He and Mrs. Wood with several friends made the trip from Detroit to the Thousand Islands and return, covering the entire length of both Lake Erie and Lake Ontario without the slightest difficulty or inconvenience. On several occasions they were caught out in moderate blows and the boat behaved perfectly.

The illustrations will give one an excellent idea of the layout and arrangement of Gar, Jr. While she has the appearance of a runabout on which a small shelter cabin has been hurriedly constructed, yet she has on board all the comforts for cruising—stove, galley, ice-box, berths, etc. Her power is a twelve-cylinder Liberty and it drives the boat at an average speed of 35½ m.p.h.

Mr. Wood has a summer home at Algonac and he uses Gar, Jr., principally for commuting purposes. Algonac is just under 40 miles from Detroit and by means of his boat he can make better time than can be made by train, automobile, or trolley car.

The writer together with Henry Sampson, chief timer of the A. P. B. A., were guests of Mr. Wood over a week-end during the recent races at Detroit. The trip both going and coming between Detroit and Algonac was made in a little over one hour. It will be a trip never to be forgotten. Starting just at dusk with a strong southwester blowing we made a trip across the waters of Lake St. Claire that before we made it we did not think it possible in a boat of that type. Several times we appeared to be under water completely, but not once did we slacken our pace. The owner had us in the forward cabin where he said the trip was more thrilling and it sure was. Rosey—the marine photographer known to the world as M. Rosenfeld—made the trip also. He chose to ride in the after cockpit where as the owner put it, all would be as serene as a front parlor on 23rd St. We looked aft several times during the trip north and from the expression on Rosey's face we couldn't imagine what he was doing. After we reached port we asked him, but all he would say was, "Praying, what do you think, I was doing, you poor fish."

To further prove that Gar, Jr. was a real cruiser we decided to sleep on board that night. The three of us matched—the odd man to sleep in the engine-room and the other two to take the berths forward. Rosey lost and was assigned a comfortable berth alongside the Liberty, but when the time came to turn in he was discovered making tracks for the house. Sampson and I slept aboard and while we have slept aboard many craft under all conditions, never have we put in a more comfortable night than aboard Gar, Jr., at Algonac.

In the express cruiser race for the trophy offered by the Detroit News, Gar, Jr., defeated all other entrants and won easily. The race was in three heats, the first under straight A. P. B. A. handicaps and the other two on an actual performance handicap based on the fastest lap in previous heats. In the first race Gar, Jr.'s best lap was made at a speed of 28.8 m.p.h. and 28.7 m.p.h. in the second heat. In subsequent races where the handicap was based on performance Gar, Jr., speeded up as high as 35.6 m.p.h. for a 2½-mile lap.

Advertising Index will be found on page 96

HARRY W. SANFORD

YACHT BROKER

501 FIFTH AVE., at 42nd St., N. Y.

Desirable yachts of all types for sale and charter
Telephone 900 Vanderbilt

TAMS, LEMOINE & CRANE

Yacht and Ship Brokers

Naval Architects

Marine Engineers

52 Pine Street

New York

BRUNS, KIMBALL & CO., Inc.

153-5-9 West 15th St., New York City

Offer over 200 re-built engines, backed by a strict guarantee, at especially attractive prices. List will be sent free for the asking. Your present engine will be taken in part payment for a new Sterling, Kermath, Gray-Prior, Doman, Missouri, Universal, 4 cycle; Eagle, Hartford and Arrow, 2 cycle; Missouri heavy oil engines, simple and economical. Burnell, heavy duty 4 cycle heavy oil engine, quick starting, economical, easy to operate. Write for offer.

Hamilton Marine Engine Exchange, Inc.
440-444 Fifty-Second St., Brooklyn, New York
All sizes rebuilt Marine Engines from one to 300 H.P. in stock.

A pair Lamb 60-80 H.P. \$2400.00 complete
Craig 100 H.P. 1800.00 complete
A pair Speedway 60 H.P. 1800.00 complete
20th Century 4 cylinder. 600.00 complete
and 100 others.

Send for bargain list, prices are right.

SUTTER BROS.

44 3rd Ave., Bet. 9th and 10th Sts., N. Y. C.

Agents for Fay & Bowen-Clay Heavy Duty, Fulton-Stanley, Jones Gears, Wizard Magnetics, K. W. Coils.

Write for our list of rebuilt engines.

Full line of motor boat accessories on hand

EVERYTHING FOR THE MOTOR BOAT

Send for our catalog and prices

E. J. WILLIS CO.

85 Chambers St. New York City

R.W. ZUNDEL CO., INC.
Most complete stock of marine supplies in New York
SUPPLIES Write today for free catalog
47 Whitehall St., New York City.
One block from South Ferry

BOAT CEDAR

Just received a few carloads of choice Cedar. Can make immediate shipment. Good assortment of sizes. Also on hand: Oak, Mahogany and other woods for boat building.

WM. P. YOUNGS & BROS.,

35th Street and East River, New York City

AVOID disaster by using a DIBAGO compass on that boat. All materials first class. No rubber gaskets to rot. A very hard pivot and high-grade jewel. Vary degree circle on dial. Brass and mahogany binnacle. Also new course finder and bearings instrument. Send for descriptive catalog.
EUGENE H. SHERMAN
Box 2 Bellevue, Wash.



HALL-SCOTT



"N' Everthin"

powered with a Hall-Scott Marine Engine broke all American records for displacement boats for 10 miles in the A. P. B. A. races at Detroit, August 31st. Her remarkable time for this distance was 16 minutes 30 seconds.

This performance proves still further our claims for the

L M-6 Marine Engine

Rated 200 HP. at 1750 R.P.M.

Develops 204 HP. at 1726 R.P.M.

Weight of engine complete, 988 lbs.

Gasoline consumption, .55 lb. per HP. Hr.

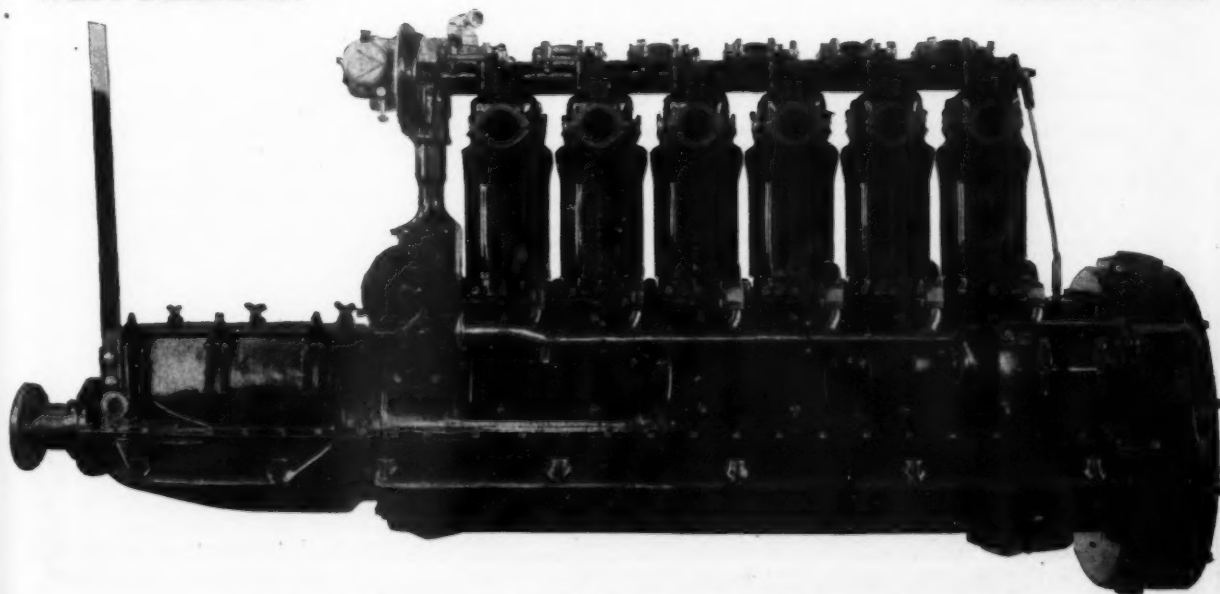
Oil consumption, .029 lb. per HP. Hr.

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Miss Detroit III Again Wins the Gold Cup

(Continued from page 12)

on an equal basis in the same stretch of water.

When the time which they made at Detroit had been converted into miles per hour, it was found that none of the three boats had reached the 60-mile-an-hour rate. But the course was short, only 2½ miles to the lap, and on the only day which the Eleventh Hour ran it was decidedly rough, so conditions could hardly be called good for 70-mile speed.

The Hacker boat was a 26-footer and had much of the appearance of the old Hawk Eye, which raced at Lake George in 1914, and on Manhasset Bay in 1915. She ran very smoothly, on an even keel, planned well, but threw a column of water 20 or 30 feet high aft of her, which showed there was a great loss in efficiency somewhere. Her propeller was a 23x48-inch Hyde, which appears to be one of abnormally high pitch. Her twelve-cylinder Liberty was connected direct to the propeller shaft without gears. This required that the motor be placed well forward in the boat, which undoubtedly threw the whole outfit out of balance. Eleventh Hour appeared to run down by the head, and in the chop-off the second day, after running around a couple of laps at a 32-mile-an-hour speed, she hit a big wave and literally slid under the surface of the water and filled up, but did not completely sink. She was soon raised, dried out and was ready for the next heat, after the owner of the Detroit had loaned a number of spare Liberty parts to replace those injured by the water, when Eleventh Hour took her Saturday evening bath.

To sum up our opinion of Eleventh Hour, the best we can say is that two weeks is not sufficient time to design, build, power, test out and race a modern hydroplane against the products of C. C. Smith and compete with such crews as always man the Detroit. We commend John Hacker's efforts and the spirit that prompted them, but he was up against too big odds.

The story of the 1919 Gold Cup races would not be complete without a word of praise for the owner of the two Misses Detroit, Garfield A. Wood. Being the only owner of a successful racing hydroplane in the country today, his position is a most unique one. A thorough sportsman from every angle, out to boost the sport to the utmost, but playing and planning to win, are traits which make everyone admire him. One of the secrets of his success is that he lives with his boats, so to speak, knows what is right and wrong with his racing machines, and has the ability to make them right if they go wrong. He does more than merely steer his own boats in races. He plans and suggests improvements in their design and construction and works with his mechanics whenever there is work to be done. If after a race a motor must be taken down and overhauled, it is "Gar" Wood who is the last to call quits for the night. A fearless driver, ready to race in any kind of sea or weather, as well as willing to agree to a postponement whenever one of his competitors requests it, makes him an ideal type of man for a race-boat owner.

By Wood's side in a race always sits probably the best engineman in the country, Jay Smith, although his brother, Bernard Smith, who drives the engine of Miss Detroit II, is a close second. The helmsman of Miss Detroit II was Dr. W. E. Sandborn, and a gamer driver never sat in a helmsman's seat. It took every bit of Wood's driving ability to keep his craft ahead of "Doc" Sandborn on several occasions during this year's races.

Paul Strassburg drove Eleventh Hour and, considering it was his first attempt in driving in such fast company, he did very well. It was he who forced the two Wood boats over the line before the starting gun in the last race, but this good piece of maneuvering amounted to naught because all three boats went over the line too soon and all had to be recalled for a new start. This led to the only friction during the meet between the committee and the contestants. This would not have happened had the committee taken the matter in their own hands, as they should have done, but the desire to please the racing drivers led to a bad start, for which the committee was blamed.

The story of the actual racing will not take long to tell. The course was 2½ miles to the lap, or twelve times around, to make the necessary 30 miles which had to be made in each of the 3 heats. Such a short course made fast time impossible, but even this course was preferable to the former 5-mile one on the Detroit river, which had two bad turns in it. The long down-river stretch of the 5-mile course was done away with, but except for this the longer course had no good points to recommend it. One curious feature developed this year on account of all boats being powered with aviation motors, which turn in the opposite direction from the usual marine type. Naturally, aviation motors required left-hand propellers, which consequently made the boats hard to make a sharp turn to port. As all the boats would be benefited by it, the race was run backward, so to speak, that is, all buoys were left to starboard instead of to port, as is generally the practice. This is probably the first time in history that a race has been run in this direction.

The first race, scheduled for Friday, August 29, was to start at 3:30 P. M., but as the express cruiser race had not finished at that time, a postponement of 30 minutes was decided upon. When 4 o'clock arrived, only the two Misses Detroit were ready, so another 30-minute delay was granted to allow Eleventh Hour and Miss Belle Isle a chance to get to the starting line. The former boat had been put into the water for the first time only a few minutes earlier. Finally, both Eleventh Hour and Miss Belle Isle sent over word that they could not be put in running order that day, so the start was made at 4:30. Miss Detroit II got over the starting line 10 seconds after the gun, and No. III, 1 second later. The great race was on. The shores were lined with people and motor cars several tiers deep. The boats were visible over every inch of the 2½-

(Continued on page 68)

Seventeenth Race for the American Power-Boat Association Gold Challenge Cup—Detroit River, August 29, 30, September 1, 1919. (3 heats; 30 statute miles each.)

Winning Boat, 1919	Elapsed Time H. M. S.	Speed Miles Per Hour, Fastest Heat (30 Miles)			
		1919	1918	1917	1916
First heat, Miss Detroit III.....	41:37	43.3	52.1	50.7	46.2
Second heat, Miss Detroit II.....	60:5	30.3	51.0	56.3	49.5
Final heat, Miss Detroit III.....	32:43	55.0	53.0	56.5	50.0
Total race, Miss Detroit III.....	2:14:26	40.2	51.04	54.14	48.6

Fastest Lap—2½ miles

First heat, Miss Detroit II.....	3:08	First heat.....	48.0	59.3	52.74	51.20
Second heat, Eleventh Hour.....	3:33	Second heat.....	42.4	55.9	59.43	55.35
Third heat, Miss Detroit III.....	2:34	Third heat.....	58.5	55.0	59.43	55.78

† Two and a half miles to the lap in 1919, five miles other years.

Gold Cup Record for 1 complete heat

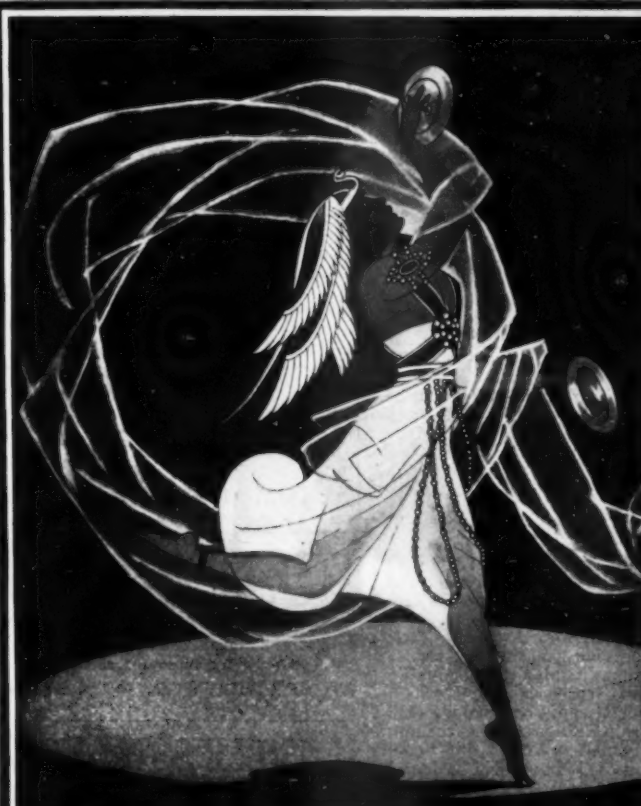
Made by Miss Detroit II at Minneapolis in 1917. Speed, 56.5 miles per hour.

Gold Cup Record for Complete Race (3 heats)

Made by Miss Detroit II at Minneapolis in 1917. Speed, 54.14 miles per hour.

Complete Summary of 17th Annual Race for the A. P. B. A. Gold Challenge Trophy—Three Heats of 30 Statute Miles Each—Detroit River, August 29, 30, September 1, 1919

Boat	Club	Time		Speed		Time		Speed		Time Complete Race	Speed Complete Race	Total Points
		1st Race	2d Race	1st Race	2d Race	3d Race	2d Race	3d Race				
Miss Detroit III.....	Detroit Yacht Club.....	41:48	60:06	43.2	29.5	32:57	56.3	54.5	2:14:51	40.2	17	
Miss Detroit II.....	Miss Detroit Power Boat Ass'n.....	41:49	60:05	43.2	29.5	33:09	54.5	54.5	2:15:03	40.0	16	
Eleventh Hour.....	West Detroit Boat Club.....	D.N.F.	D.N.F.	4	



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My Ideal Auxiliary

(Continued from page 28)

veniently be removed to the cockpit to afford additional sleeping facilities. They are of such a width that in combination with the upturned pipe berths a comfortable back rest is secured when sitting.

Sufficient room is provided in the long space beneath the cockpit for storage of awnings and cars, etc. A lazarette aft also provides additional storage space for clamping gear, the emergency rope and life belts. This hatch, it will be noted, is on the starboard side in one plan and on the port side in another. It should be on the side opposite the exhaust. The same is true of the companion steps; they are placed on the port side in order to facilitate starting the engine and to get at the carburetor, which happens to be on the starboard side of the engine specified.

Access to the engine is also gained by raising a hatch in the bridge deck, although the controls lead along under the cockpit to the steering box. I have decided that the best control arrangement and the one to be adopted would be similar to the prize-winning answer in the January *MoToR BOATING*, 1917, page 29. The control lever would project from the box when in use, at other times falling within it.

The aforesaid hatch in the bridge deck sets flush to provide a clear span across which to place a cushion for "bunking out." A similar space is found which allows room for sleeping accommodations in the thwartship section of the cockpit, "the skipper's walk."

In the cockpit of this boat will be found the greatest divergence from its predecessors, Jenguin I and White Cap, for instead of providing a maximum of space beneath the deck and leaving just a cockpit well, I have designed quite a large cockpit different in construction to any I know. The beams beneath the flooring go the entire width of the hull and are made fast to the ribs. The cockpit itself is rectangular, although the boat's deck and coaming curve as shown. The seats are set lower than the deck line, so that the combing may form a backrest and the gas tanks are beneath the seats in the cockpit with shut-off cocks. Thus in case of leakage they are easily accessible for inspection and any loose gas can readily make its escape. I have never had the least cause for anxiety from having the tanks up under the after deck in the cabin, but just for the change, and because I believe this arrangement carries the vote, have decided to build the new boat this way and remove the bogey. This construction of bridge deck and cockpit provides a maximum of strength, space, and comfort. Of course the well must be water-tight, with self-bailing pipes.

A collapsible table sets in the cockpit or in the cabin. It is big enough for party use, but small enough to fold up and stow away when not wanted.

The steering gear may to some appear a bit old fashioned, but I believe a rope tackle is more elastic and will allow of less kicking when at anchor than metal gears.

All Penguin II's decks are canvas covered and painted gray, a color which is peculiarly restful to the eyes. Brightwork is reduced to a minimum, and used generally on perpendicular surfaces where it is least affected by the weather. The interior is to be in white enamel with bright trim and gray in the galley.

The chief dimensions are: length, 29 feet; O. A., 25 feet 6 inches W. L.; beam, 9 feet 10 inches extreme; beam on W. L., 9 feet; draft, 4 feet; total sail area, 569 feet; iron keel, 3,600 pounds.

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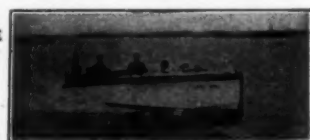
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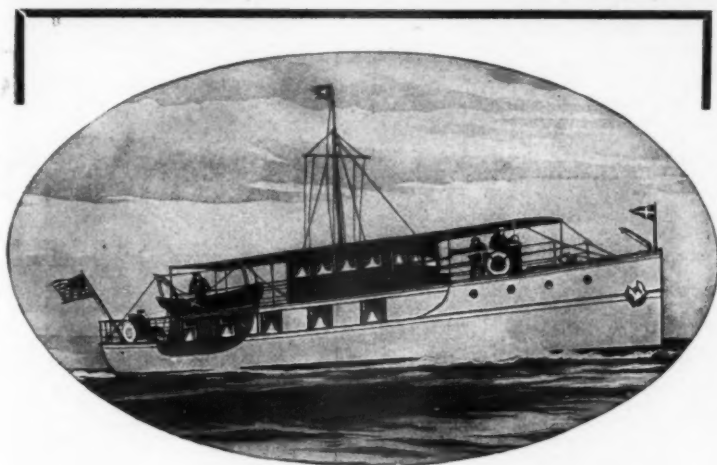
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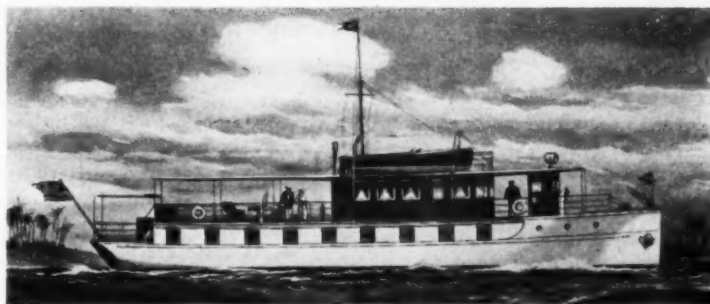
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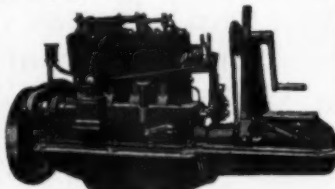


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Motor Work Boats on the Gulf Coast

(Continued from page 38)

the fishermen, the Clay, Frisco Standard, Buffalo, Automatic, Wolverine, and Gray seem to be popular in about the order named, though this is not an exact list, inasmuch as I have not been able to sell all the engines or speak to all the owners in the great fleet. A number of small, fast dispatch boats are in use, especially in the fisheries, for communication between the packeries and the fishing fleets. Van Blercks, Speedways, Sterlings, and Fay & Bowen are popular, while some few owners of these boats have installed automobile engines, though in only two instances out of about a score which have come under my observation, have they operated with success. The time is ripe in all sections of the Gulf Coast, however, for introduction, demonstration and sale of the small, compact, simple, heavy-duty fuel oil engine, but these boat owners will have to be shown; they will buy nothing on the catalogue picture or the salesman's word.

The hulls of these boats for the most part are home-built, the larger ones of the lugger type, with the somewhat high bow, making steering easier in heavy weather, the wide deck space, with the engine far aft, and considerable overhang, wide at the bow and tapering back to the stern to protect the cargo from water. The smaller boats are of as varied type—as a glance at the accompanying photographs will show—as the owners themselves, with the exception of the auxiliaries, which are of uniform schooner type, save the large barkentines which are being built at Orange, Texas, and which have proved their worth in oversea service during the war. The fishermen have evolved a type of hull, built of cypress, which seems to endure forever, some of them converted sail boats, having been in service for a quarter of a century or more, though apparently as solid today as when launched. Within the last year or two a type of wooden barge for handling sugar cane and rice has been evolved for use on the narrow bayous and streams leading into the sections of country where these crops are produced. These barges are about 40 feet long by 12 to 15 feet wide, provided with a semi-tunnel stern with a small wheel, driven by a 6 or 8 h.p. engine. They move slowly, but they furnish a comparatively cheap and convenient method of transportation, especially in interior Louisiana, where waterways are abundant, and through sections where roads are not easily built or maintained. Many of these barges could be introduced, with small expenditure of capital, as their construction requires nothing but straight work by a carpenter and the installation of the power plant no special skill.

The work done by this fleet ranges from the tobacco carriers and sponge fishers of Key West, the sponge fishers of Tarpon Springs, the fruit boats of Tampa, the fishing fleets of the Florida Keys to the freight boats which distribute their cargoes over 12,000 square miles of lowlands in southern and southwestern Louisiana, and the big 3,500-ton auxiliaries which are carrying lumber, steel billets and general cargo to Genoa and other Italian ports from Beaumont, Texas, New Orleans, and Gulfport, Miss., these latter owned by an Italian company, backed by the department of marine of the Italian government, and built by the International Shipbuilding Co., of Gulfport, Pascagoula and Orange, of which Henry Piaggio is president. The value of all these motor work boats is impossible to get, but it

(Continued on page 64)

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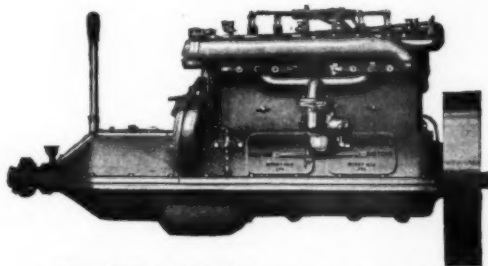
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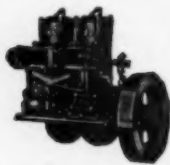
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Mullins Steel Boats Can't Sink

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a 16-foot Runabout, a big
36-foot Auto Boat, or
something in between—
remember that Mullins
Steel Boats are guaran-
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Designed by America's
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Consumes 1/2 pt. of crude oil or less per H.P.
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Write for full information and prices.

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Four Cycle Light Weight Engines

Five sizes—Single cylinder 3 1/2 H.P., 4 H.P., 7 H.P. Two cylinder 7 H.P., 8 H.P.

Send for Catalogue. Live Agents wanted.

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**Motor Work Boats on the
Gulf Coast**

(Continued from page 62)

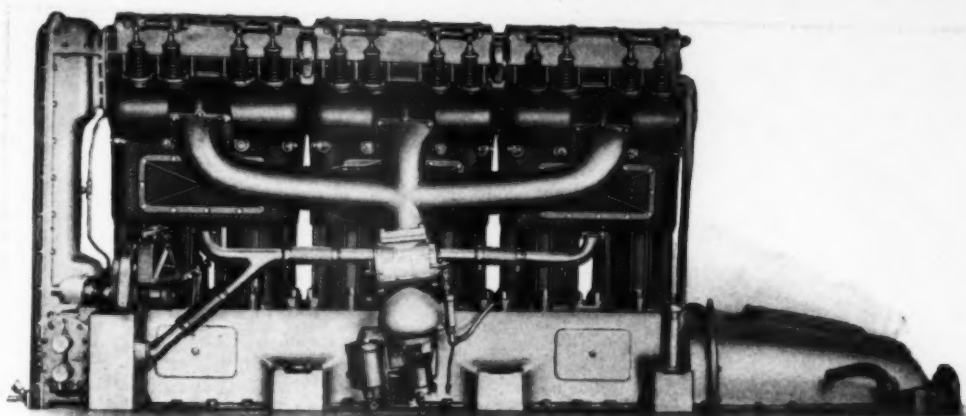
appears to me that about \$4,000,000 would be a fair estimate, considering the age of the power plants and the hulls on the majority of the boats. Potentially, however, they represent a vastly greater capital than this, when their work twelve months in the year and the size of their earnings is considered. One motor freighter, operating out of New Orleans, reported her net earnings last year at \$20,000. She probably cost, some twenty years ago, about \$4,000, and she has never had a year when her earnings fell below \$12,000. She handles only freight and passengers through the lower country.

Another motor boat, home built, at a cost, engine and all, of about \$1,200, and now nearly twelve years old, carries fish and shrimp from the marshes of southern Louisiana to New Orleans, and takes general merchandise back to the fishing villages and individual settlers in the marsh. Her owner told me, and I have every reason to believe him, that he, with his two sons, netted an average of \$7,500 a year with this boat, and that, during the past year, they banked \$11,200 solely from their work with this boat. She is about 40 feet long, built of cypress, with a heavy-duty 15-h.p. engine, and with the care these three men give her, is good for at least ten years more.

Four important canals lead into New Orleans from this great network of waterways, from the Mississippi River and from the Gulf Coast. There are two other canals, but they are not of great use or importance. Two, the Bayou St. John and the New Basin Canal, come into the city from Lake Pontchartrain, and through them the motor boats go and come on their runs northward on Lakes Pontchartrain and Maurepas, and eastward through Lake Borgne to the Mississippi coast. Two, Harvey's Canal and the Barataria and Lafourche Canal, come in from the southern and southwestern Louisiana and the great truck garden and fishing grounds of Barataria Bay and Grand Isle. From Grand Isle alone, last year, these boats handled cucumbers which returned half a million dollars to the growers on that sandpit which guards the coast of Louisiana from the Gulf. It is estimated that this fleet handled more than \$15,000,000 worth of seafoods, many of them working straight through to the fish packeries of the Mississippi coast, and others bringing their supply direct to New Orleans for sale fresh in the market. There is not a day in the week when these canals are not filled with these motor work boats, a babel of French, Spanish, English, Italian and Greek hanging over them, until one might well imagine he were on some small tributary to the Nile, near Alexandria, or with the fish boats down the coast of delightful Dalmatia.

The majority of these boats come in to the heads of the canals and there dispose of their sea products to the ring of Italian fish dealers which controls the markets of New Orleans. If it were left to the fishermen, old high cost of living would be out of business in a day, for they average three cents a pound for their shrimp, seven cents for their fish and about six cents a dozen for oysters. The fish ring, however, hauls these seafoods in Ford trucks a mile or two to market and gets from 15 to 30 cents a pound for the shrimp, 30 to 45 cents for the fish and 20 cents a dozen for the oysters. So far, neither state nor city government has made any effort to curb these profiteers.

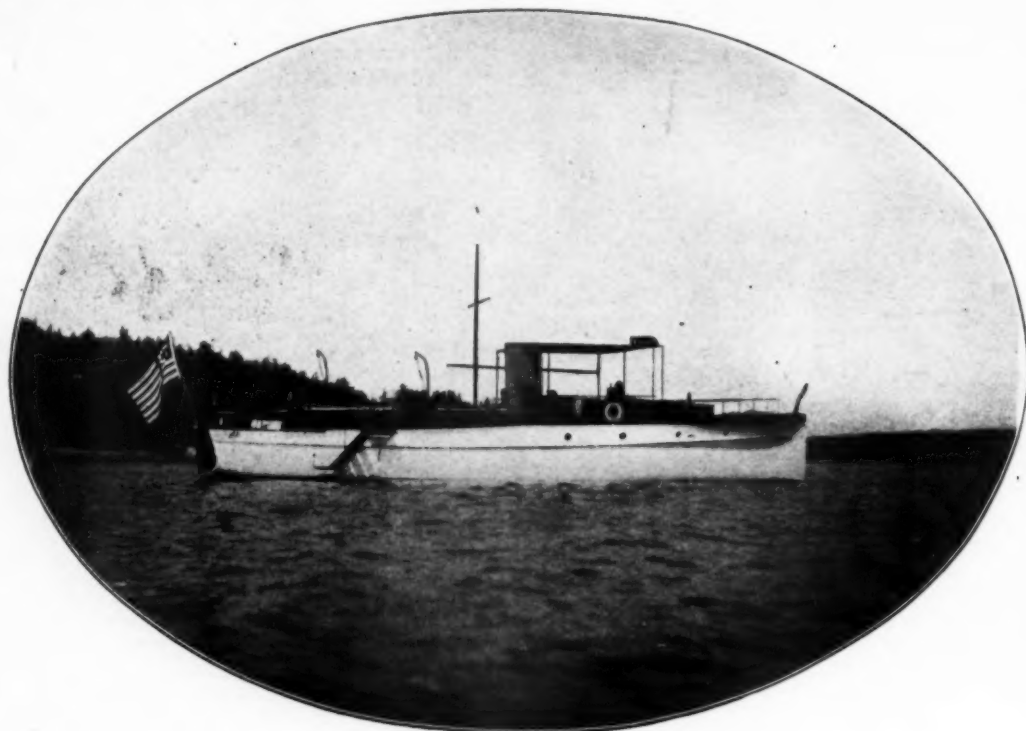
(Continued on page 84)



The possession of a fine craft powered with an M. & T. Model J-6 produces the keen satisfaction based on the knowledge that, structurally and mechanically, it ranks with the elite of modern yachts.

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For heavy cruisers and workboats requiring a silent-running, economical power plant, Murray & Tregurtha Heavy Duty Engines are unexcelled. They last as long as the boat.

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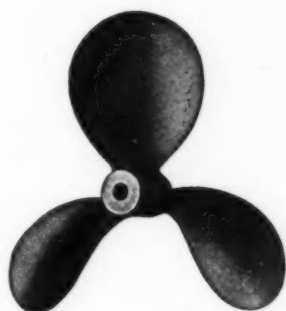
If you have ever experienced engine trouble when miles from shore, you know the annoyance and danger which a Boyce Moto-Meter would have saved you.

The minute the engine starts overheating—from any cause whatever—the Boyce Moto-Meter gives instant warning: in plenty of time to make tracks for the nearest landing before trouble develops.

Then, too, it makes for economy, as a motor kept at the most efficient temperature saves gasoline.

The service performed by the Boyce Moto-Meter makes it the most indispensable part of a motor boat's equipment.

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LONG ISLAND CITY, N. Y.



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- 1915—Miss Detroit
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- 1917—Miss Detroit II
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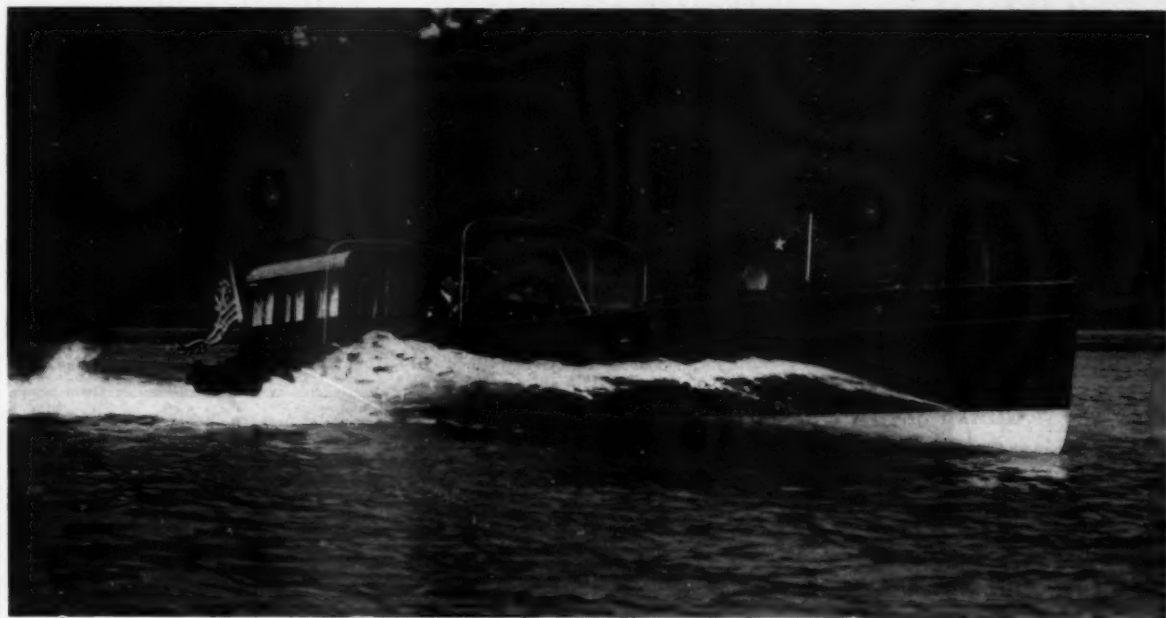
Isn't that a record of which we may be justly proud?

Catalog and data sheet upon request.

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BATH

MAINE



35 foot Speedway Sedan Runabout

Designed and built for Mr. Philip Corbin of New Britain



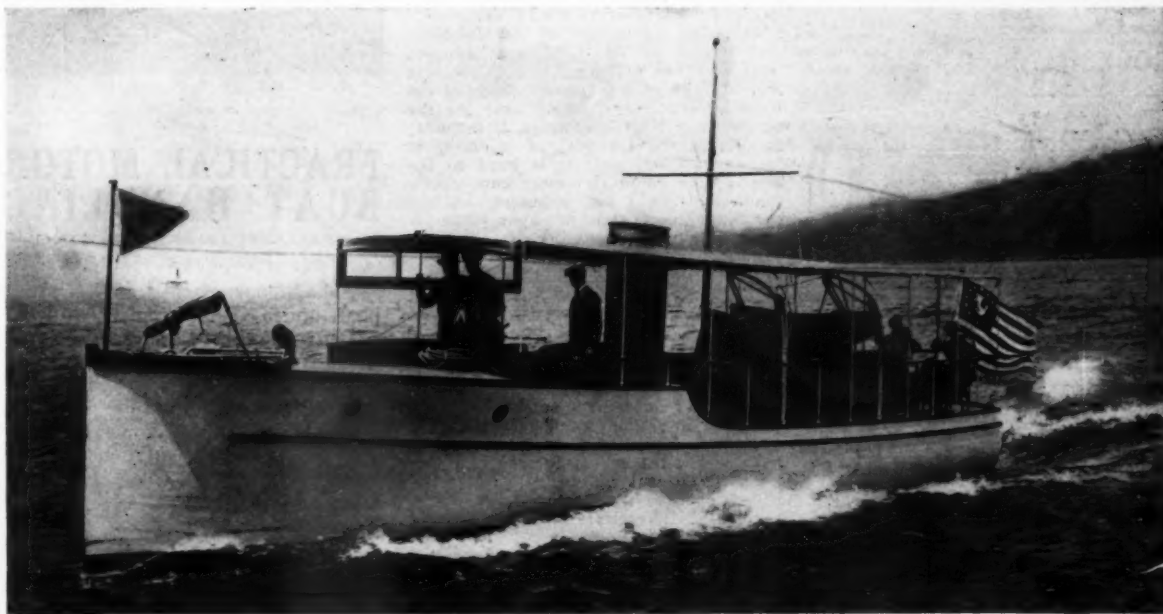
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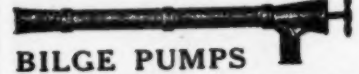
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Waterproof Spar Varnish
For all OUTSIDE AND INSIDE work. Defies Salt Water. Guaranteed.
Brooklyn Varnish Mfg. Co. Brooklyn, N. Y.

Runabouts Defeat Hydroplanes in Toronto

(Continued from page 17)

had been sent away in the second heat of the series. Yet without tying up for a minute after his grind across the lake, he set after the field of racing craft which had 48 minutes start of him. He miscalculated his gasoline supply for, after running 15 out of the 30 miles, he ran out of gasoline and was compelled to withdraw from the race.

The other hydroplane racing was Leopard II, ex-Peter Pan VIII. This boat will be remembered by the readers of MoToR Boating as formerly owned by the late James Simpson of New York and Jack Bickell of Toronto. She was recently purchased by Griff Clark of Toronto and entered by him. She is a Crouch design, powered with an eight-cylinder Sterling racing engine. Although Leopard III made the best speeds of any of the boats in the series, namely 42.85 miles an hour for one five-mile round, yet she did not have the ability to keep it up for the 30 miles. In the first race she completed only about two-thirds of the distance when she had to be towed in on account of shearing off the connecting bolts in her propeller shaft flange coupling.

In the second day's races, Leopard III completed the 30 miles in one hour, 12 minutes and 47 seconds, after a number of stops. Trouble again followed this boat in the third day's racing and she failed to finish.

As mentioned above, Miss Toronto could not be started for the first day's races but she managed to complete the 30 miles on the second day, making the course in 56 minutes and 32 seconds which was only 18 seconds better than the displacement boat, Helden II, required for the same course.

On the third day, Miss Toronto completed only a little over 15 miles when she was required to withdraw once again. Later in the week when this same boat was racing for the Great Lakes International Gold Challenge Cup, she took fire on the second lap and burned.

Helden II, a displacement craft owned by Fred R. Miller, of Toronto, designed by Crouch and powered with a Van Blerck motor, was the winner of the Canadian International Gold Challenge Trophy. This boat took first place in both the first and third heats and second place in the second heat. Her running time for the 30 mile heats was 55 minutes, 37 seconds; 56 minutes, 50 seconds; 57 minutes, 18 seconds respectively. It is hard to see how a boat could run more consistently than Helden II did, although she was slower on spurts than the hydroplane yet her consistency won her the coveted trophy.

The other displacement boat was Leopard I, powered with a Sterling motor. Her running was also very consistent as her elapsed time for the three days will show. On the first day, this boat required 56 minutes, 47 seconds to complete the 30 miles. In the second heat, she did the course in 61 minutes, 36 seconds. On the third day in 57 minutes, 46 seconds. The second day's running would have been more consistent except for the fact that Leopard I was 1 minute, 20 seconds late in getting over the starting line.
Summary of Results: Three Heats of 30 Miles Each

Boat	1st Heat	2nd Heat	3rd Heat
Helden II.....	55-37	56-50	57-18
Leopard I.....	56-47	61-36	57-46
Miss Toronto.....	D.N.S.	56-32	....
Leopard III.....	D.N.F.	72-47
Arab IV.....	D.N.S.	D.N.F.

Advertising Index will be found on page 96

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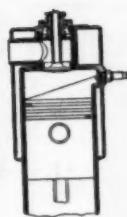
Frisbie an' I



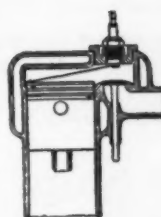
MORE POWER FROM YOUR GAS

How the "Valve-in-Head" Conserves Power

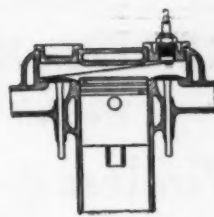
NOTE the cylinder construction of the ordinary type of motor with "L" or "T" head. The space used for the valves is just so much additional area to be filled with gas. The spark fires into a distant pocket, and cannot cause that instantaneous ignition of the whole charge which produces the greatest possible power. The Frisbie, with its valves in the cylinder heads, has no pockets to waste fuel or gather carbon. The spark fires right across the center of the combustion chamber, igniting the whole charge instantaneously, and the full power impulse is directed squarely on top of the pistons. That is why you get 15% to 20% more power from your gas in the



Frisbie



L Motor



T Motor

Compare the Cylinder Construction



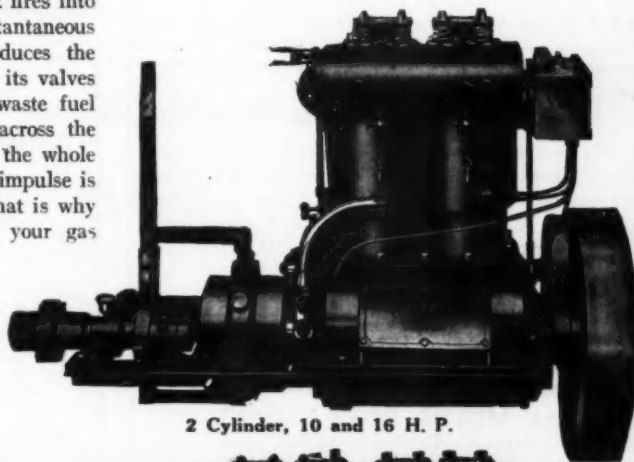
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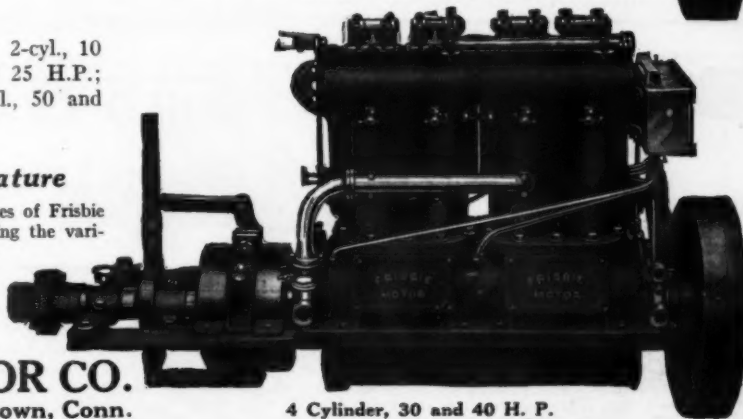
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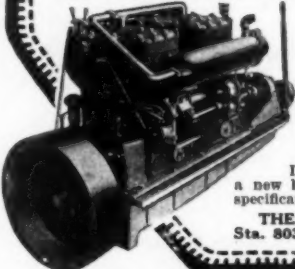
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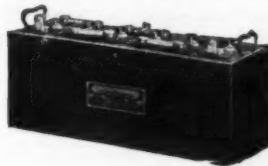
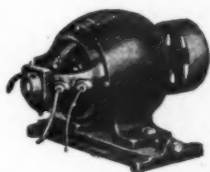
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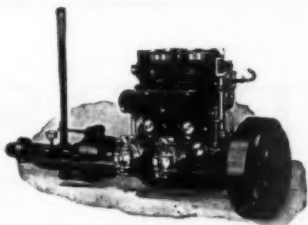
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Crank shaft, connecting rod, eccentric rod and
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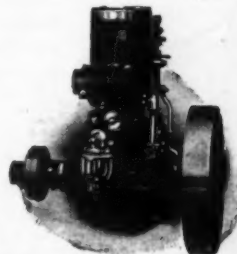
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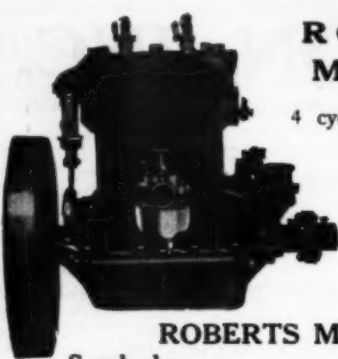
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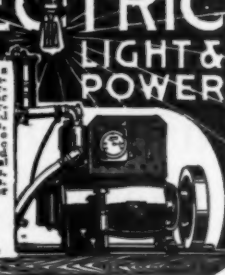


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The "SUPERIOR"

The motor of consistent, reliable, economical service for work and pleasure boats. Mechanically operated intake valves. Leak proof main bearings. Built to last a life time and will do it. We guarantee you satisfaction or your money back.

One cylinder, 6 H. P. complete equipment... \$120.00
Two cylinder, 12 H. P. complete equipment... 180.00
Three cylinder, 18 H. P. complete equipment.. 240.00
Four cylinder, 24 H. P. complete equipment.. 300.00

Superior Motor Works, Jackson, Michigan

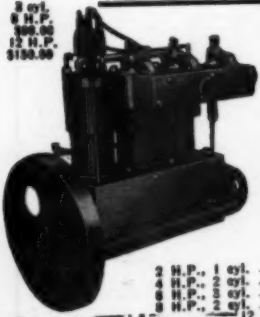
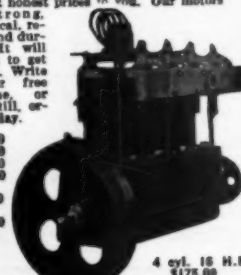


Dunn 4-Cycle Marine Motors
1919 Models—Kerosene, Gasoline

The demand for "Dunn" Motors during 1919 will be even bigger than it has been this past year. Why? Because we are selling a line of 4 cycle engines of high grade, at honest prices to you. Our motors are strong, economical, reliable and durable. It will pay you to get a Dunn. Write for our free catalogue, or better still, order to-day.

2 H.P.	1 cyl.	.....	\$42.50
4 H.P.	2 cyl.	.....	75.00
6 H.P.	2 cyl.	.....	90.00
8 H.P.	2 cyl.	.....	125.00
12 H.P.	3 cyl.	.....	150.00
16 H.P.	4 cyl.	.....	\$175.00

Dunn Motor Works
Ogdensburg, New York, U. S. A.

Built by

LUDERS

The Last Word in Yacht Designing and Building

Luders Marine Construction Company
Stamford, Conn.

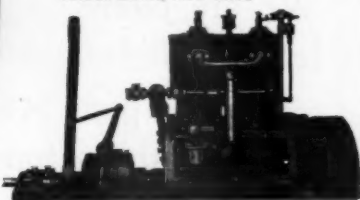
LIFE PRESERVERS



Masten's Life Preservers are adjustable and reversible, and meet the latest rulings of the Government going into effect June 1, 1919.

Motor Boats Marine Engines and Supplies

on sale at our display rooms, Booth 4, Concourse, Hudson Terminal Bldg., 50 Church Street, New York.



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THE ONLY SCREW HOLES IN THE WORLD



You drive the screw holes with a hammer in any material.
The screw holes are made for wood screws or machine screws to fit all sizes of screws. The hole is removed and you leave a permanent screw hole.

The Stine Screw Holes Co.

Manufacturers
WATERBURY, CONN., U. S. A.
DEPARTMENT 21

The Biggest
Little Thing
in the World

Some of the Reasons Why Screw Holes Will Be Bought and Used and Not Become Dead Stock for Anyone

- 1—They can be used without damage to receiving material.
- 2—They enable you to standardize to wood or machine screws in all material.
- 3—They are made of brass and will not rust under atmospheric or moisture conditions.
- 4—ECONOMY—They save more time value than the holes cost.
- 5—You get them for nothing and are paid for using them when you count time saved.
- 6—Screw holes have been needed ever since the first screw was used.
- 7—Special tools are NOT needed in using them in any material.
- 8—They can be used in any place a screw can be used.
- 9—By using screw holes, screws can be used in many places, and in many materials where it is impossible to use screws without them.
- 10—These are the only really-made screw holes in the world.
- 11—No special screws are needed. These screw holes fit any wood screw or machine screw now in stock.
- 12—They make the nearest possible job in any material.
- 13—Every store where screws are sold must carry them in stock, because the line of screws is not complete without screw holes for them.
- 14—Every shop and factory where screws are used must also have these screw holes to fit the screws.
- 15—They are endorsed by all dealers in screws and by all users of screws.
- 16—Screw holes are entirely new and the world supply is yet to be furnished.
- 17—This is a progressive Old World of ours; and every active person in it must adopt all improved methods, and all new articles that will help him keep in the front line of progress.
- 18—We among the first to stock up in screw holes if you are a dealer in screws.
- 19—We among the first to install screw holes in your shop or factory, as you begin to save money soon as you use them.
- 20—In spite of the high cost of brass, screw holes are yet cheap.
- 21—We are letting the world know that screw holes can now be secured, by means of extensive advertising in all the principal Trade Journals that have the largest circulation among dealers in screws as well as users of screws.
- 22—Do not let your customer ask you for screw holes before you have them in stock. BE A LIVE WIRE.
- 23—They make everlasting holes in any material.
- 24—They mean "Plug-No-More" screw holes.
- 25—They are the result of Necessity being The Mother of Invention.
- 26—Anyone who can drive a nail can use screw holes.
- 27—Send for a sample and convince yourself.
- 28—Mechanics who use them say, "What do you think of that?"
- 29—In fact there are NO REASONS why screw holes should NOT be used.

Each of these reasons are enough to sell Screw Holes. There are many other reasons.

Write at once for our handsome Color Card showing screw holes in various materials which will be sent on request, together with samples and price list.

Equipped for Economy and Efficiency

There is no fear of wasting gas in the operation of this boat because it is fitted with a **JONES TACHOMETER**

This means that it travels a maximum speed at a minimum cost.

It does not require an expert to appreciate that speed and efficiency in motor boat operation are produced if the number of engine revolutions is right.

JONES TACHOMETER accurately records just what you must know if you are to obtain the best results from your engine.

Send today for our new booklet

JONES-MOTROLA, Inc.
29-33 West 35th St. New York



27 Foot Cabin Cruiser



We build all sizes and types, but have made a specialty of this design.

CONSTRUCTION and workmanship is the best—equal in every respect to the high class of yacht work on which our reputation has been based for over 20 years.

The lines are very fast, the launch is safe and able in severe conditions of wind and sea, and it has a large cockpit and very comfortable accommodations below decks. It is equally adapted to day service or cruising.

STEARNS & McKAY CO.
MARBLEHEAD, MASS., U. S. A.



"JASCO" TANK

"Fire Insurance" for Your Boat!

VALUABLE boats are destroyed and lives are imperilled each year by fire—and most fires can be traced to leaking tanks.

"Jasco" Tanks are more than mere "fuel containers." In addition to keeping *all* the gasoline where it should be kept, every "Jasco" Tank is a positive protector of life and property.

"Jasco" Tanks are made of the finest quality drawn steel—seamless, leakless, tinned and tested. They're endorsed by authorities—used by thousands.

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We are publishing a booklet on Florida Coast Harbors—showing depth, rise of tide and other information of interest for Winter cruising.

Mailed on Request

Gulf Refining Company

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The pleasures of boating enhanced by the feeling of Security one enjoys if your Craft is protected by *GOOD WOOLSEY PAINT and VARNISH—TOP and BOTTOM.*

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AND

MARINE PAINT SPECIALTIES ARE THE WORLD'S STANDARDS

Copper Paints—Brown, Red and Green, Yacht White, Deck Paint, Marine Mixed Paints, Metal Bottom Paint, Seam Paint, Seam Compounds, Sparon (Spar) Varnish, Engine Enamels, Canoe Enamels, Boat Bottom Seam Compound, etc., etc.

C. A. WOOLSEY PAINT & COLOR CO., Jersey City, N. J., U. S. A.

Send for our Marine Booklets, Free—Contain Color Spots and information "How to Paint a Boat."



The Michigan Reversible Propeller Wheel

Don't take up valuable room in your boat with a cumbersome and troublesome reverse gear.

With a Michigan Reversible Propeller on your boat you are free to navigate without danger of collisions and with the same safety as with a reverse gear costing many times more. Besides this you are saved the annoyance of repairs and break-downs so often occurring with a reverse gear.

Michigan Propeller Wheels are designed and constructed for service and results. A propeller for your every need.

Write to-day for information.

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C. J. LITSCHER, Pres.

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We also manufacture Universal Joints, Couplings, Stern and Thrust Bearings, Ball Races, Power Gills Pumps.

SAVE TIME LABOR MONEY BY USING A CRANE PULLER

Built for
SERVICEGuaranteed
for LIFE

Patented Feb. 1, 1916

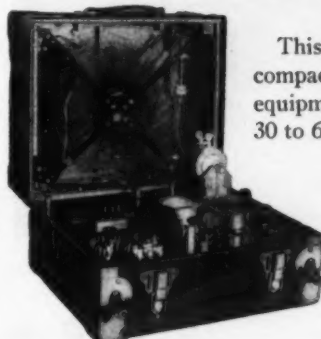
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WITH LOCKING ARMSWrite for Our New Catalog
ORDER FROM YOUR DEALER

CRANE PULLER COMPANY

54 Lake Street,

Arlington, Mass.

Radio Telegraph And Telephone Equipment



This is our complete, compact radio telegraph equipment designed for 30 to 60 foot cruisers.

The size of this unit is 18" x 15" x 10".

It weighs only 55 pounds.

It comprises both transmitting and receiving equipment. The transmitter may be driven from the cruiser's lighting system, directly from the main power plant, or by a small gasoline engine. The receiver requires no power whatsoever. The compactness, ruggedness and simplicity of this equipment renders it an attractive investment for yacht owners.

Other equipment for larger yachts for communicating over any distance.

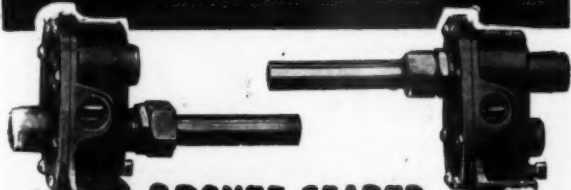
Keep in touch with the world while cruising.

WIRELESS SPECIALTY APPARATUS CO.

Engineers, Designers, Manufacturers.

BOSTON, MASS., U. S. A.

OBERDORFER



BRONZE GEARED PUMPS

The successful operation of your engine depends very largely on the efficiency of the cooling system, the oiling system and the fuel feed. Equip your engines with the ever-reliable Oberdorfer Pumps and you can forget all about your cooling, oiling and fuel feed systems. Their action is entirely automatic—the speed of the motor determines the supply. A feature of utmost importance is the fact that the Oberdorfer will never over-feed nor under-feed.

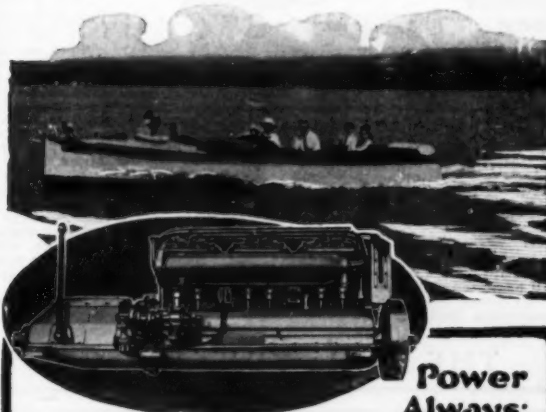
Oberdorfer Bronze Geared Pumps are standard equipment on Kermath, Red Wing, Gray,

Lathrop and other good marine motors.

Send at once for the Oberdorfer pump booklet.

M.L. OBERDORFER
BRASS COMPANY

812 E. WATER ST.
SYRACUSE, NEW YORK



Power Always; Speed When You Want it

The perfect performance and dependability of a WISCONSIN MOTOR take every "irritation" out of motor boating. Its surplus power and endurance assure you of easier speed even under the most trying conditions.

Wisconsin MOTORS

cost a trifle more, to be sure, because they cost more to produce. But their initial cost is your assurance of a better engine that costs far less ultimately.

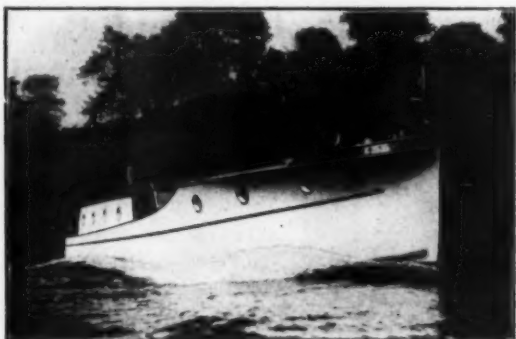
Specifications on request.

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Station A. Dept. 302, Milwaukee, Wisconsin

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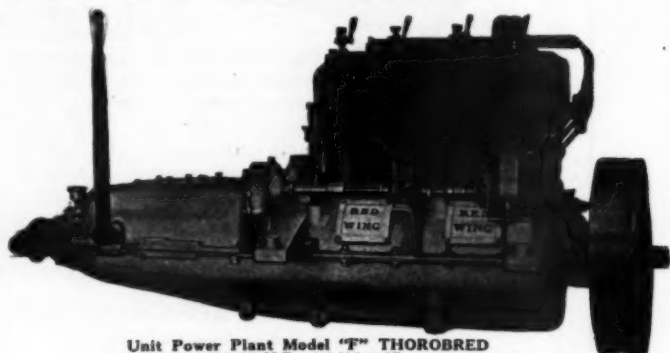


Rochester "Built Rite" Boats

are the result of years of boating experience. An evolution culminating in a line of cruisers and runabouts of exceptional excellence. We specialize in the forty footer illustrated but have most interesting designs of cruisers from twenty-six to fifty-two feet. Advise us as to your requirements and we will send full details of the boat to fit your needs.

We also build high class runabouts from nineteen to thirty-five feet.

Rochester Boat Works, Inc.
Charlotte Station Rochester, N. Y.



Unit Power Plant Model "F" THOROBRED
28-36 H.P. 4 1/16 x 5"
Furnished with or without Unit Power Plant

Red Wing Thorobred

THE MOTOR WITH POWER TO SPARE
LIKE GOVERNMENT BONDS

The time was when money spent for a marine motor was money gone, and the buyer had to get his investment back, or try to, through the short lived service of his power plant.

Since those days Marine Motors have been perfected to a high degree, and the man who buys a THOROBRED now is investing in a lasting value. Use of the motor constitutes liberal interest, and if he decides to sell he can get close to his original investment after a number of years. That's how good a motor the THOROBRED is.

Write for the Details today.

Four sizes. 14 to 40 H.P. Burn either kerosene or gasoline.

Red Wing Motor Co., Red Wing, Minn., U.S.A.

Dept. B.

Improved Motor Boat Closet

Figure 1404

Dimensions: 18 x 18 x 11" high to top of bowl; 2 1/2" cylinder. For above or below water line.

The best little closet on the market today, possessing many of the advantages of the large size toilet. All brass and porcelain. Oak seat and cover.

All prices subject to market advances, which are continually changing.



The J. H. Curtiss Co. Pioneer Specialists in Marine Sanitary Fixtures

Since our advertisement appeared in the first issue of Motor Boating, December, 1907, hundreds of Curtiss fixtures have been installed in motor cruisers and yachts of all sizes, including some of the finest boats launched within this period.

The Curtiss line is exceptionally complete, varied in type, size and price to meet every possible requirement. Each model has been designed in accordance with our wide experience in boat work and can be depended upon in quality, service and durability no matter whether it is our highest or lowest priced model.

"PRICES ON APPLICATION"

With Pump

Cock on pump swings upward, thus preventing breaking of bowl. Soap-dish is porcelain and removable.

No. 5
Height, 19 in.
Width, 19 in.
Depth Closed, 8 inches.

Quartered Oak Case, or Mahogany Case.

Lining and Fixtures Nickel-plated. Porcelain Bowl. Mahogany or Quartered Oak Case.



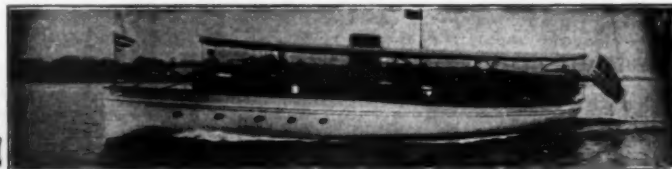
Fig. 1392

THE J. H. CURTISS CO.

2 South Street, New York

20th CENTURY Gasoline Motors

2-Cylinder—8 1/2" x 8 1/2"—15-20 H.P.—400 R.P.M.
4-Cylinder—6 1/2" x 8 1/2"—40-50 H.P.—400 R.P.M.
6-Cylinder—6 1/2" x 8 1/2"—65-75 H.P.—400 R.P.M.
Strictly high grade four-cycle engines, built for heavy duty service.



65 ft. x 14 ft.—JINETTA—J. H. Becker
Most yachtsmen know of the satisfaction given by yachts designed, built and powered by us; our experience is at your command; plans on file of all size yachts.

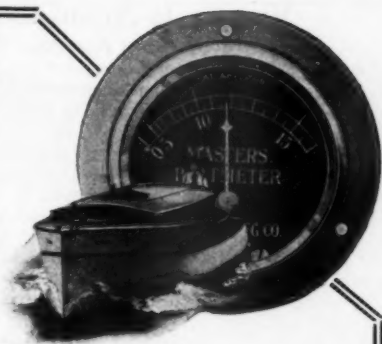
Send Us Your Inquiries

NEW YORK YACHT, LAUNCH & ENGINE CO.

::

Morris Heights, New York City

Know Your Boat Speed



From the moment you start you can know your boat speed in miles per hour by glancing at the

Masters Boatmeter

It shows the speed accurately without measured distance or watch.

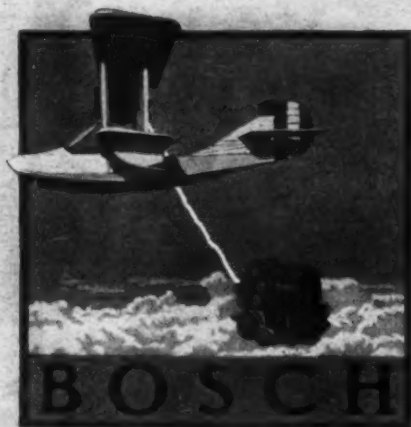
It is invaluable when navigating by chart and compass; a safeguard against excessive speed in fog or dangerous passage.

Inexpensive, reliable, easy to install and can be placed anywhere on board. Made in three models for speeds up to 16, 24 and 37 miles per hour.

Ask us to send you a clear explanation of economical speed—it may save you many dollars' worth of fuel.

Masters Manufacturing Co.

6 Woolsey Square, Jamaica Plain,
BOSTON, MASS.



The Supreme Ignition Test

The life or death necessity for a continuous power stream is the reason for the popularity of Bosch Magneto Ignition among airmen. The same surety of ignition service which Bosch—America's Supreme Ignition System—has given thousands of aviation motors is assured in any Bosch Equipt Product.

AMERICAN BOSCH MAGNETO CORPORATION

Main Office and Works Springfield, Mass.

Branches: New York Chicago Detroit San Francisco

More Than 200 Service Stations in Over 200 Cities

GRAY-PRIOR

FOUR CYCLE
MARINE MOTORS
Built up to a Standard—not down to a price

A Clean-Cut Power Plant

For Commercial Boats and Cruisers

Model D-4, Medium Heavy Duty

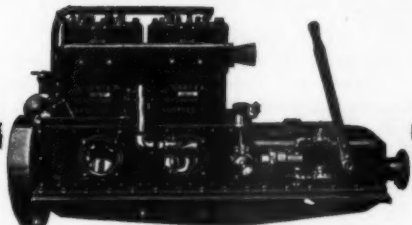
36 Horse Power Bore, 4 1/4 inches Strokes, 8 inches

Write today for full description and prices

The Gray & Prior Machine Co.

56 Suffield St.

Hartford, Conn., U. S. A.



Tungar

RECTIFIER



TWO SIZES

6 amps. 15 volts
2 amps. 7.5 volts

A reliable battery charger for motor-boat owners

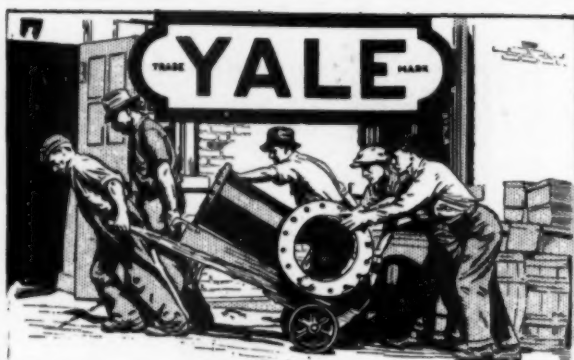
The charging of storage batteries is much more difficult for motor-boat owners than for motorists. It is usually necessary to remove the battery from the boat and carry it to a charging station somewhere inland.

The G-E Tungar rectifier can be installed in the private boat-house and connected to the alternating current lighting circuit. It will charge batteries quickly and without any attention while in operation. Its price is moderate and the current consumption low. It is an ideal device for the purposes for which it is intended.

Send for booklet B-3439

General Electric Company
General Office Schenectady, N.Y.

A283



Which—

A gang of straining, hauling men, or one man working easily, quickly and safely?

HOOK a Yale Spur-Gear Chain Block on a Brown Hoist Trolley, suspended from an I-beam—and realize in your own plant how the lifting, moving and hauling of loads can be speeded up, made easy and safe for the operator and the load.

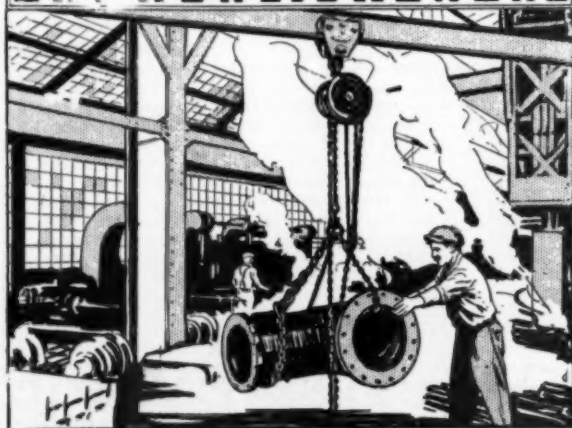
—and then watch production increase.

'From-Hook-to-Hook-a-Line-of-Steel'

Ask your Machinery Supply House or write for catalog on Yale Chain Blocks and Electric Hoists.

For a Factory Locking Equipment use a Yale Master-key System.

The Yale & Towne Mfg. Co.
9 East 40th Street New York City



Victory II Again the Victor

(Continued from page 42)

did not care, as he could not catch us, and after rounding both the spar and gas buoy recognized the boat as a non-competing. Here, again, the tide rushing out of Northport Bay gave us a welcome boost and as we approached the line heard the welcome news we were first boat in. Crossing at 4:22:00 we immediately filed our times of turning the marks of course D and waited to see who would win the other prizes. Eleven minutes and sixteen seconds later Gardenia crossed, followed eight and a half minutes later by Kodak with Inga, Irene, Empress and Marlene in the order named.

The race was faultlessly handled by Com. Charles Sunderland and Mr. E. H. Tucker of the Regatta Committee on board the flagship Emoh III whose speed enabled her to start the boats at Huckleberry Island and then arrive at line off Lloyds Harbor in plenty of time to take the finish times.

THE SEVEN COURSES FOR THE RACE OF THE NEW YORK ATHLETIC CLUB, AUGUST 30, 1919

Course	Buoy	Location	Pass Mark on Your
A	Gas 24 Bell 13A Can 13 To finish	The Cove Lloyds Pt. Eatons Pt.	Starboard Port Starboard
B	Spar 20 1/2 To finish	Greens Ledge	Starboard
C	Spar 17 Gas 24 Can 13 To finish	Matinick The Cows Eatons Point	Port Starboard Starboard
D	Bell 12 Bell 19 Bell 13A Spar 1 To finish	Hart Island Prospect Pt. Lloyds Pt. Northport Bay	Port Starboard Starboard Starboard
E	Bell 2 Bell 26 Bell 13A Spar 1 To finish	Mott Pt. Bluefish Shoal Lloyds Point Northport Bay	Port Starboard Starboard Starboard
F	Spar 24 1/2 Spar 1 Bell 13A Can 13 To finish	Greenwich Pt. Oyster Bay Lloyds Pt. Eatons Pt.	Starboard Port Starboard Starboard
G	Gas 28 S. C. Bell 19 Bell 26 Bell 13A To finish	Scotch Capa Prospect Pt. Bluefish Shoal Lloyds Pt.	Starboard Port Starboard Starboard

SUMMARY OF RESULTS

Boat	Course Sailed	Passed	Time
VICTORY II (H. A. Jackson, Jr.)	D	Start Bell 32 Bell 19 Bell 13A Spar 1 Finish	1.33.54 1.55.00 2.16.45 3.39.30 4.14.05 4.22.00
GARDENIA (H. Anderson)	C	Start Spar 17 Gas 24 Can 13 Finish	1.49.46 2.29.45 2.23.05 4.05.25 4.33.16
KODAK (R. H. Haslinger)	B	Start Spar 20 1/2 Finish	1.29.11 4.41.55
INGA	D	Start Bell 32 Bell 19 Bell 13A Spar 1 Finish	1.55.25 2.16.05 2.38.00 3.59.00 4.36.00 4.44.50
IRENE (C. E. Lauten)	D	Start Bell 32 Bell 19 Bell 13A Spar 1 Finish	1.24.47 1.49.20 2.14.00 3.58.00 4.36.00 4.51.34
EMPRESS	B	Start Spar 20 1/2 Finish	1.34.52 3.51.35 4.54.45
MARILENE (H. M. Williams)	C	Start Spar 17 Can 13 Finish	2.03.40 2.41.30 4.20.00 4.59.00

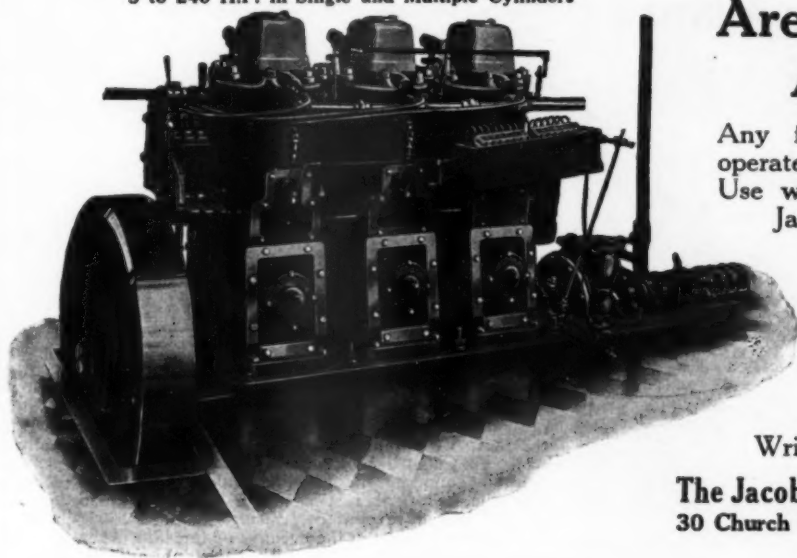
Silver Heels Wins Consistency Race.

(Continued from page 25)

Mauval 12 points each. The third heat witnessed the withdrawal of Pirate and Valoria. Towards the end, the remaining contestants were close together but could not overtake Arlah who finished first. Silver Heels nosed out Josephine, making her total score 26 points, and consequently was awarded the prize. Josephine, with 24 points, was awarded second prize. Betty Jane with 22 points and Arlah with 21 points were awarded third and fourth place.

"JACOBSON" Marine Crude Oil Engine

3 to 240 H.P. in Single and Multiple Cylinders



Are Best for Any Purpose

Any fuel makes a Jacobson operate perfectly. One Year's Use will pay for your motor. Jacobson's Engines use

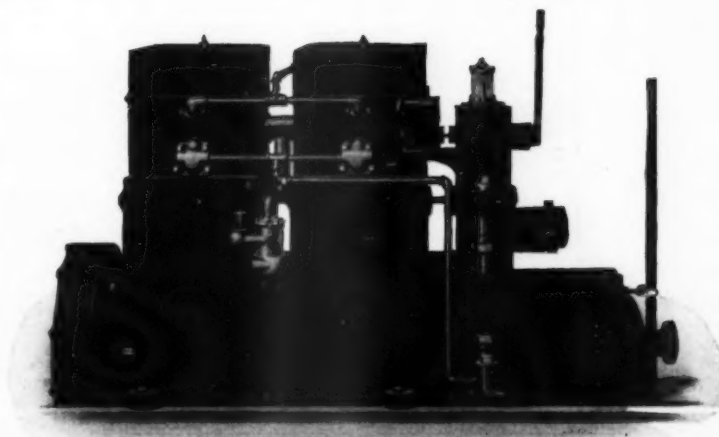
**Kerosene
Distillate
Crude Oil**

Prompt delivery

Write today for details

The Jacobson Engineering Co., Inc.
30 Church Street, New York, N. Y.
U. S. A.

DUPONT MOTORS



READY FOR FALL DELIVERY

**2, 4, 6 Cylinder
20, 40, 60 Horsepower**

When you own a Dupont you own the most accessible motor built. 45 minutes to get at every vital part of your motor. Everything built in. Nothing to interfere with operation.

Dupont Motors are built for your satisfaction.

Write today for All Information. Then Buy

DUPONT MOTORS

DELAWARE MARINE MOTORS CO.

Commerce Street

Wilmington, Del.

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TALBOT

Trade Mark Reg. U. S. Pat. Off.

Boilers Steam Power Plants

*Use the Cheapest Grades of
Crude Oil as Fuel*



This cut illustrates the compactness of a Talbot 50 H. P. installation. The boiler beside the engine eliminates the usual network of pipes and takes the minimum of space in the engine room.

For the commercial or pleasure boat, a Talbot Power Plant has no equal.

A 50 h. p. unit will occupy a space of only 16 square feet. This one has a power plant far more dependable than a gasoline or Diesel type engine and occupying space about the size of the former and far less than the latter.

Running cost is about one-tenth the cost of gasoline. Anything that burns will give power, but liquids are preferred.

A Talbot Steam Engine is perfectly balanced and runs without noise.

Don't decide on your power plant until you have investigated the Talbot Steam Boiler and Power Plant.

Write for Bulletin "B"

*We have some desirable territory open for representation.
Write us for our agency proposition*

TALBOT ENGINEERING CORP.

66 Broadway

New York City

PLANTS: PLATTSBURGH, N. Y.—MONTREAL, QUEBEC

Bermuda to New York on the Winning Chaser

(Continued from page 19)

sickly moon that was visible through the flying clouds, when the signal watch called "Blinker message," and I laid aside the sextant to read the news. From the fact that it was a yard-arm blinker flashing at us I knew that we not overtaking a chaser, and we soon learned that the strange ship was the U.S.S. Hannibal, which had started with Leonidas a day ahead of us, but had been unable to keep up her terrific speed of seven point five knots. The meeting was a pleasant one, for it assured us that we were on our course, but the radio which Hannibal immediately sent on to Leonidas disclosed our position to the other chasers and gave them an advantage which we didn't possess with respect to them. Four hours later the odds were evened when we picked up another message from Hannibal to the effect that 90, with 224 following close astern, had overtaken her and been given permission to proceed. A short while after that 351 was heard in radio communication with Hannibal, now thirty miles astern of us, and we stopped worrying about the Bolsheviks and wondered what 217 was doing for herself. But she maintained silence throughout the race.

The morning of the 18th, when we passed out of the Gulf Stream and squared away for the last 170 miles of the run, was particularly bad for navigation, and a series of Marcq St. Hilaire sights taken through a haze that sometimes thickened into a fog gave us Summer lines varying from ten miles inward to five away from the sun. The sea had picked up again, making it still more difficult to catch the sun on the horizon, but we had obtained a good sight for longitude, and at noon the haze burned away sufficiently to give us a fair shot for latitude. With a ten-second sextant and a fifteen-second octant in our possession, Mr. Day and I were able to take simultaneous noon sights, which agreed within two miles, and we took the mean of our noon fixes and laid our course directly for Ambrose Channel Lightvessel.

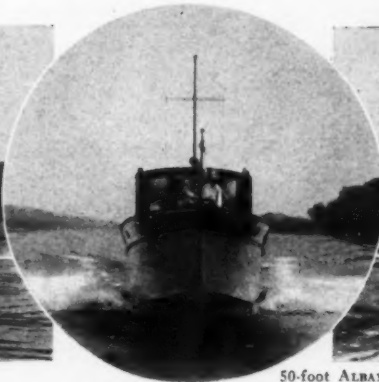
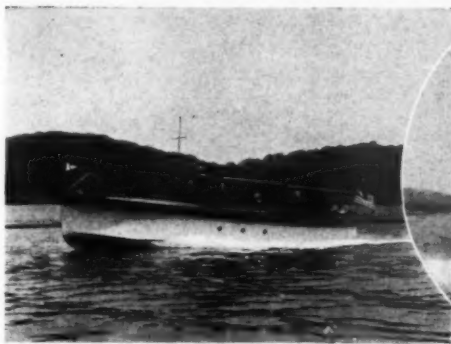
Again sounding the gasoline tanks, we found the engines could be still further speeded up, and so we made a second change in the revolutions, raising them to 390 per minute. Except for an hour in the evening of the 18th, when we slowed down a notch for fog, these were the only adjustments to the speed of the port and center engines, and their performance throughout the race was gratifying in the extreme. The work of the starboard engine was no less satisfactory, but a heavy sea rolling down from the northeast as we approached land required us to slow it down to 375 for the last five hours to avoid undue racing of the propeller. The Standards in the sub chasers stood a lot of abuse, vocal and mechanical, in the early days of their European service, but they and the black gangs got to know one another in time. After covering a distance equal to the greatest circumference of the earth the motors were in better condition for continuous service than when they left the shop.

We had hoped to overtake Leonidas and her chasers at about noon of this day (when we were in Lat. 38° 13' N., Long. 71° 47' W.), and run through the formation flying "Close up" from our halliards; but in the haze we missed her and only knew of our overtaking her by the increasing strength of her radio. In the afternoon we were in touch with her and received instructions to proceed from Ambrose to the finish line between Governor's Island and the Statue of Liberty in the event of there being no umpire aboard the lightvessel; but the next word Leonidas had of our position was relayed via radio from a telephone in the Brooklyn Navy Yard.

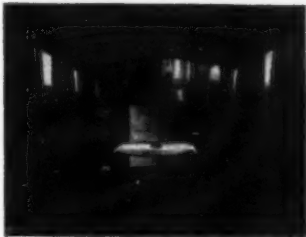
Having run through thick fog in the early evening and a blinding electrical storm a little later, we sighted at 11:30 the welcome flash of Navesink Highlands, and knew that our race was nearly run. But we had again come to westward of our course, and it was necessary to alter one point to the northward to head for the lightvessel. This we did, and an hour later sighted the yellow glare of Ambrose, in the meantime rolling so heavily in the swell that we dipped the port waist deck under. At 1:17 of the morning of the 19th we lay to and spoke the lightship—and continued to speak it until we had aroused the caretaker and informed him of our arrival. The race umpire was not yet aboard her, so at 1:26, morally certain but not yet positive that we had won the race, we proceeded four bells and a jingle up the Channel and crossed the line at 2:52, 75th Standard time. Twenty minutes later, or at 4:12 A.M., summer time, we were tied up alongside the destroyer 106 in the Brooklyn Navy Yard, with our time recorded in her deck log.

Specific facts and figures are usually distressing, but I include a few for the benefit of those owners of ex-S.P. boats who, in June of 1920, may care to go after the 131's record: For the first twenty hours of the race we averaged 11 knots at 350 r.p.m.; for the next twenty-four (noon to noon) we made 11½ knots at 375 r.p.m.; and for the remaining fourteen

(Continued on page 84)



50-foot ALBANY EXPRESS CRUISER DE LUXE.



OWNER'S CABIN looking forward. 50-foot Albany Express Cruiser De Luxe.

Albany

BOATS



DINING SALOON looking aft. 50-foot Albany Express Cruiser De Luxe.

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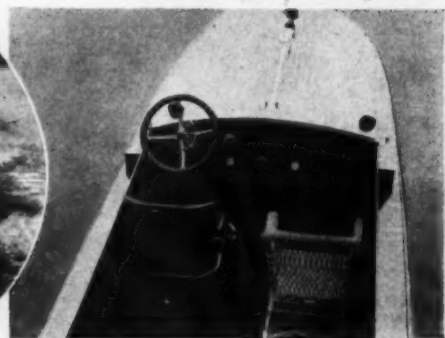
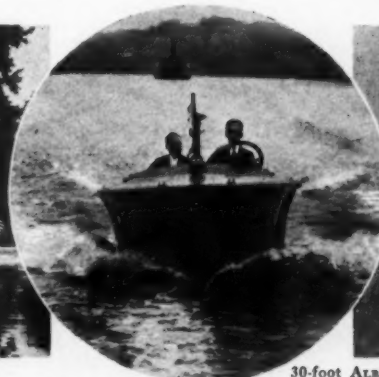
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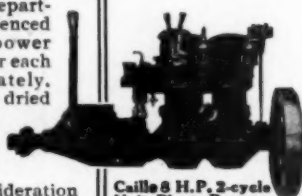
WE have saved hundreds of boat owners thousands of dollars through our Individual Service Department. Many owners think they need a much larger motor than is actually necessary. Others buy motors too small. In neither case does the user secure complete satisfaction.

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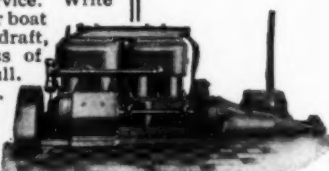
You can positively rely upon their recommendations. They are unbiased and unprejudiced. And their assistance is free to anyone—whether a Caille motor is used or not. Use this service. Write us. Tell us about your boat—its length, beam, draft, speed desired, class of service and type of hull. We'll write you fully.

The Caille line of motors is complete in every respect, from outboard motors to 30 H. P. inboard motors. It covers all classes of motors. Some have electric starters, provide electric lights, have bulkhead control and all the refinements a boating lover could desire. Others are more simple and less expensive. Write us. Get complete details. Use our Individual Service Department. It's maintained for you.

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410 Caille Bldg., Detroit, Mich.



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Unit Plant. Reverse
gear mounted on
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Ideal for average
pleasure boat.**



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electric light for boat.**



CAILLE

On Marine Motors Is a Hallmark of Quality

Bermuda to New York on the Winning Chaser

(Continued from page 82)

and a half hours we turned up between 390 and 400, giving us a final speed of better than 12 knots and an average for the run of 11.6. We finished the race with 550 gallons of gasoline aboard.

The conditions for navigation, what with hazy days and squall-swept nights, were exceptionally difficult, and the average force of the wind was about four, Beaufort scale, never blowing from more than two points abaft our port beam. Our elapsed time for the 660 miles between the starting line off St. David's Head and Ambrose Channel Lightvessel was 56 hours and 56 minutes, and for the 680 miles between the start and the finish off Bedloes Island was 58 hours and 31 minutes. Ailsa Craig, which holds the previous record for the course, ran from the American Motor Boat Club dock to Bermuda in 65 hours and 39 minutes.

As we learned definitely on the afternoon of the 19th, when Leonidas and her convoy caught up with us at our mooring off 135th Street, New York, we beat the 217, our nearest competitor, to Ambrose by 1 hour and 44 minutes. She spoke the lightship at 3:01 A.M., Standard time, and was followed thirty minutes later by 351. S.C. 224, which had followed 90 all the way and spurred up in the last few miles to beat her, reached Ambrose at 7:25, and 90 took fifth place a short time after. The crippled 129, proceeding under her own power, but in company with the tug Ontario, arrived shortly before noon. Fortunately for 131, we failed to intercept a last-minute broadcast from Leonidas which instructed the racing chasers to lay to off the entrance to New York until the arrival of the convoy, and so we were the only one actually to cross the designated finish line at racing speed.

I cannot praise too highly the work of Chief Machinist's Mate Charles Popeck (who has just shipped over for another four years) for his excellent work in tuning up the engines so that they burned a maximum of air and a minimum of gasoline; nor the faithful services of the five other men of the black gang, upon whom in large measure fell the strenuous task of keeping the engines turning, thus doing their bit toward winning the race. Nor can I conclude without reference to the excellent helmsmanship of the six men of the deck force who stood the wheel watches. Rather than omit credit where it is due, I append the complete roster of the enlisted men aboard 131—the best crew that ever chased a submarine or drove an S.C. boat to victory:

Name	Rate
Alvey, William A.	BM2c
Brennan, John F.	MM1c
Conrad, Chester E.	MM2c
Denike, Albert C.	GM2c
Donaldson, Roy H.	Sea
Doughty, Hartwell T.	CGM
Francis, Roy P.	Sea
Grelle, Daniel G.	MM2c
Gyles, Frank E.	CMM
Hoffman, George A.	SC1c
Hovelsmeier, Henry B.	CBM
Jannette, Harry M.	QM1c (L)
Laubenstein, Charles	Cox
McBride, Constantine J.	QM1c (L)
Morrell, Watson L.	CE (r)
O'Brien, Thomas F.	QM1c (L)
Popeck, Charles	CMM
Schultz, Lawrence H.	Elc (r)
Shanks, Lester L.	CMM
Welshbillig, Howard S.	QM3c
Young, Carl W.	Elc (r)

ALFRED T. LOOMIS.

Motor Work Boats on the Gulf Coast

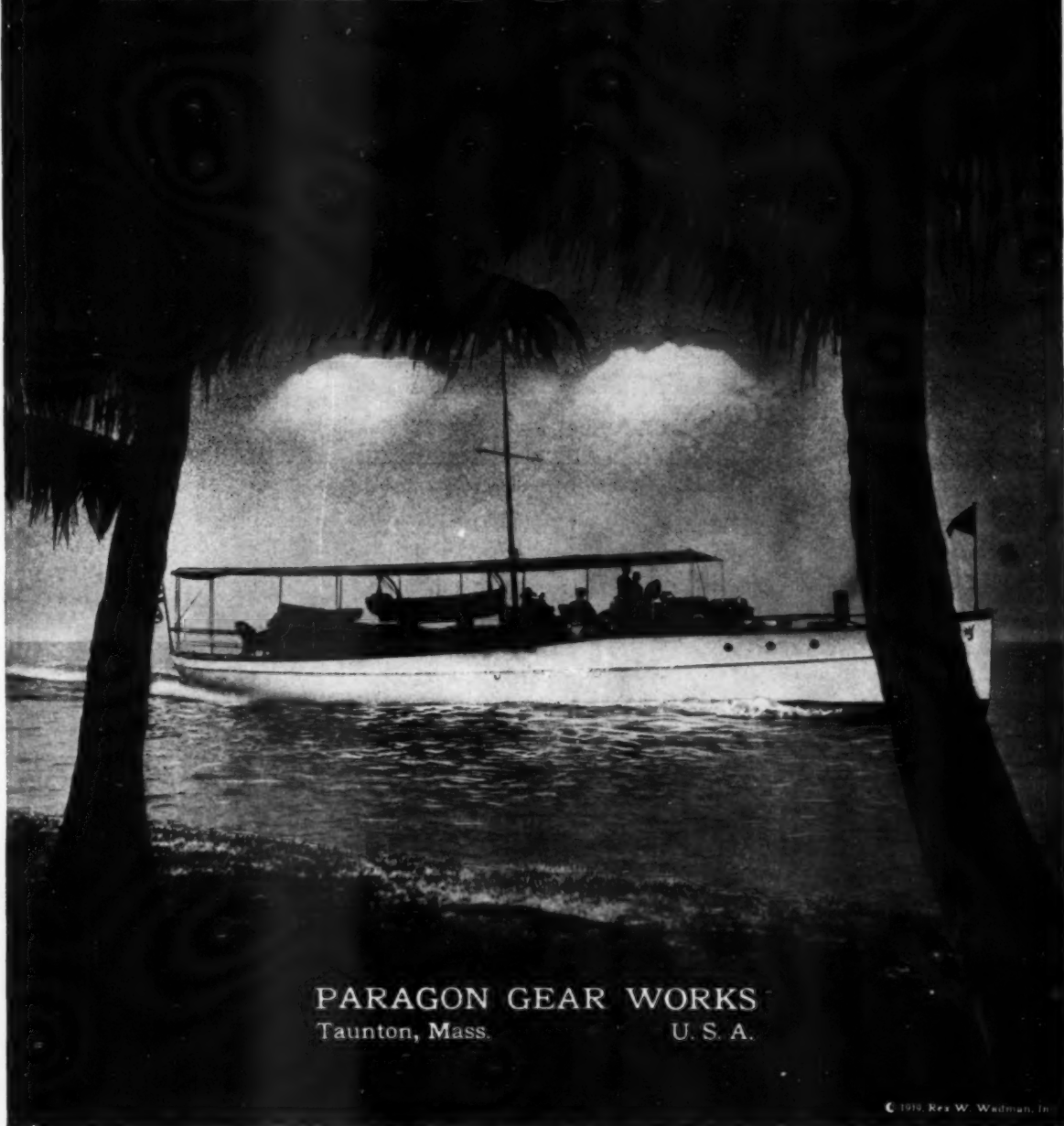
(Continued from page 64)

Another class of boats which operates in and out of New Orleans, but which handles mainly general freight and passengers, without paying attention to the fish trade, has a whole wharf and a huge steel wharfhous for its own purposes on the New Orleans side of the river. This is at the Bienville Street landing, where a space of at least three blocks is devoted to these motor workboats. Back of this landing is one of the best steel sheds of the entire four miles of such warehouses, and here the motor freighters operating up and down the river and to the lower coast load and unload.

Motor tugs also are coming into use in New Orleans harbor and on the inland waterways, though their development has not reached the point attained in eastern and northern ports. The war drew heavily of the young men from the motor workboat flotillas in all southern ports, but now these workers are coming back, and the power squadrons of the South see ahead of them a better and more prosperous year than they ever have had, while the opportunity for the improvement in power plants, through actual demonstrations by manufacturers' agents, and large sales of new engines is greater than it ever has been, owing to the money these boats have made in the past year.

—whether it be amongst Florida's Beautiful Keys
or Maine's Rocky Islets—the majority of
the really worth while boats
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GEARS



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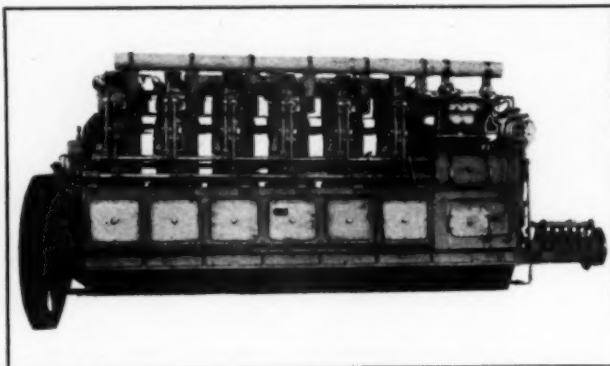
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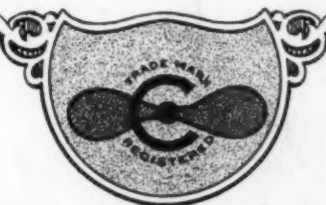
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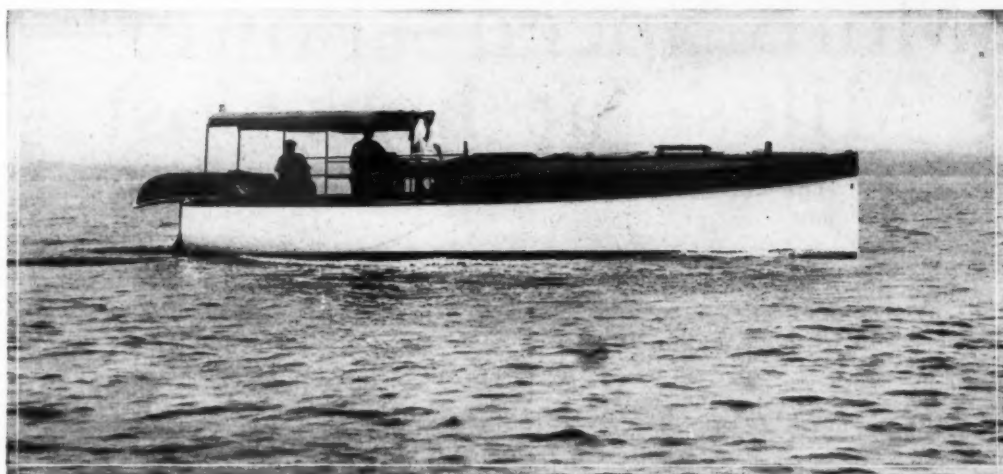
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To Victory On Victory II Equipt With a Columbian Propeller



VICTORY II, owned by Mr. Harry A. Jackson, of the New York Athletic Club. A 36' Cruiser powered with a 20-35 H.P. Sterling Engine, won first prize in the recent Block Island Race from Travers Island to Block Island—approximately 110 miles. Victory II also won the New York Athletic Club's race from Huckleberry Island to Lloyd's Harbor and return on August 30th.

AND SHE WAS EQUIPT WITH A COLUMBIAN PROPELLER

Logically so, because Columbian Propellers have helped so many other boats to win races, in fact, practically every important race run during the past five years has found the winning boat depending on the ever-reliable Columbian Propeller for the consistent, efficient service so necessary in a race.

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More Speed—Power— Miles—at Less Cost

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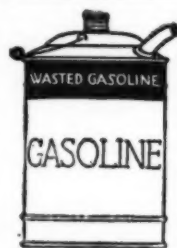


This small can will take you the same distance as the one on left if Eccolene is used.

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Less noise and smoke
Always clean spark plugs
Elimination of carbon troubles
25 per cent. increase in miles
A saving of many dollars

Two Dollars will bring a trial can of Eccolene which, together with 160 gallons of gasoline, will take you the same distance as 200 gallons of gasoline without. Send for your trial can today.




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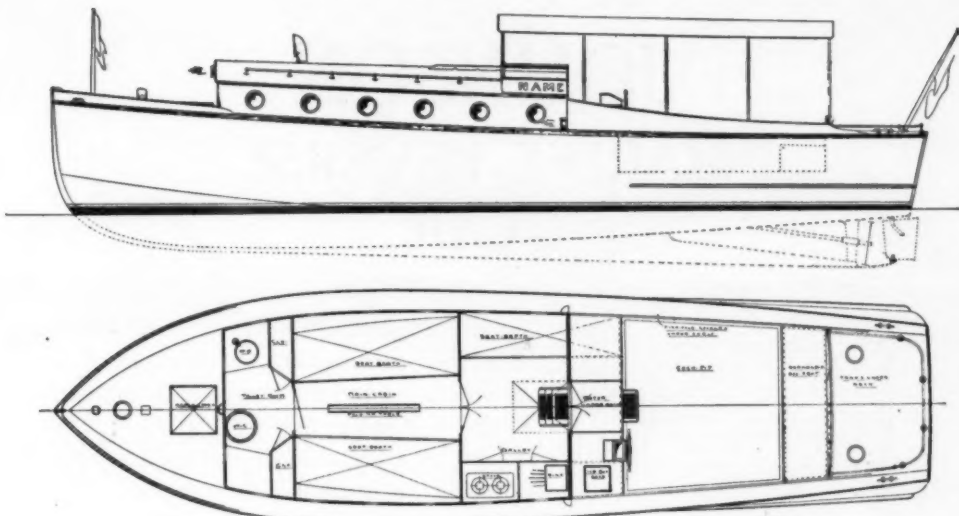
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Advertising Index will be found on page 96



"The Motor That Crossed the Atlantic"



Continental Engineers Pick Scripps for Miami Anglers' Fleet

Miami has set the fashion of doing things right in the motor boat world.

When the Miami Anglers Club decided on a fleet of twelve one-design cruisers, the nucleus of a deep sea fishing fleet, the Miami spirit again manifested itself in thoroughness and vigor of plan and execution.

With a membership composed of boatmen and yachtsmen of many years experience, a pretty good idea of what was wanted in this class of service prevailed. Lest no detail escape, John L. Hacker was commissioned to draft plans and act in an advisory capacity in the building of the first twelve boats.

The plans worked out and accepted, left next the choice of motors.

When given the specifications, calling for speed, stamina and endurance, quietness, cleanness, smoothness and absolute reliability in engine performance, Mr. Hacker immediately recommended a SCRIPPS Model D-4.

But the Anglers Club likewise enjoys a membership of many men high in the automotive industry like Mr. Huff, former electrical engineer of the Ford Motor Company, likewise Mr. B. F. Tobin, Sr., of the Continental Motors Company of Detroit. Men like this know what's what in engines.


A separate and unbiased survey of all suitable power plants available was decided upon. In this Mr. Tobin enlisted the services of Mr. Fredericks, chief engineer of the Continental Motors Company as well as Mr. Kries, the Experimental Engineer.


One by one motors were eliminated and finally a searching inspection and tests of SCRIPPS motors in the making and in service led to the selection of the SCRIPPS Model D-4.

Benefit by the findings of these engine authorities. Let a SCRIPPS power your boat. You will enjoy a motor modern to the minute, and a time-tested machine that has reflected the highest ideals in motor building for 14 years.

Built in sizes from 10 to 75 H.P., two, four and six cylinder, gasoline or kerosene.

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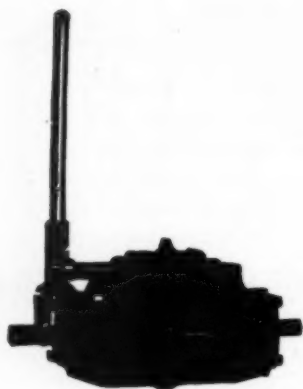


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Only Johnson gears are ball-bearing equipped throughout. Radial bearings at both ends reduce power loss to a minimum,—double thrust bearings at the propeller end take all the load whether running in forward or reverse. Thus protected, the gear runs with pleasing smoothness and noiselessness.

Ball bearings make a better reverse gear. More than anything else, they have given the Johnson its superiority in length of service, economy of power, and all-around satisfaction.

Johnson Gears are made in five practical sizes, to cover every possible requirement in light or medium powered boats. A glance at the table below will show the strikingly favorable combination of *compactness* with *power*. And our ratings are well within the capacity of the gears—absolute reliability being our first consideration. Keep this table for reference. One of the sizes listed is exactly the gear for your boat.

Gear No.	H. P. per 100 R.P.M. Max.	H. P. for High Speed Motors Max.	Weight		List Price Cast Iron Case	List Price Aluminum Case	Min. Length Overall	Width Overall	Depth from Shaft Center	Height from Shaft Center	Shaft Diameter
			Cast Iron Case	Aluminum Case							
0	1/2	5	23	19	\$48.00	\$72.00	11 1/8	7 3/4	2 1/4	3 3/32	5/8
1	1	10	40	32	72.00	96.00	13 7/8	9 7/8	2 1/2	4 1/8	7/8
1A	1 1/2	15	70	55	84.00	108.00	16 1/2	10 1/8	3 1/8	4 1/8	1
2	3	30	93	75	96.00	120.00	18 1/8	11 3/8	3 13/16	5 1/8	1 1/8
3	5	50	248	211	144.00	180.00	24 3/8	16 1/4	5 1/8	7 1/8	1 1/2

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6 inches to 4 feet

And all sizes in between are manufactured by us. A wrench for any purpose on board ship or in the plant. Complete your kit with Coes Wrenches.

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We now have this motor in production in greater volume than any like marine motor that has ever been produced. Our new plant has the capacity at the present time of thirty of these new "VM" motors every nine hours and you can depend on immediate delivery on receipt of your order from this date on.

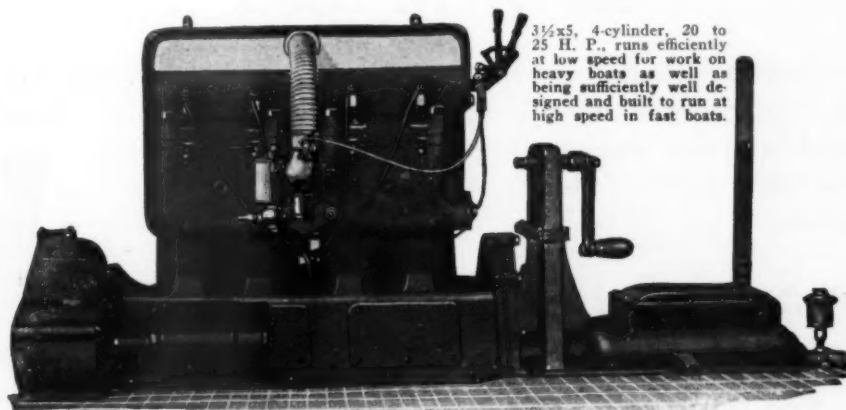
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The bearings on this motor are big bronze back bushings made of the highest quality of bearing metal it is possible to secure. The lubrication

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Our new cylinder head with its hot-spot construction, exclusively our own, on which we have applied for patents, enables you to use the lowest grade gasoline or kerosene with satisfaction in this motor. It also enables you to throttle the motor and get efficient results at very low speed.

The motor cannot back-fire and set your boat on fire. You can have enclosed flywheel or not, as you choose. Standard Electric Starters FIT the job without "tinkering".



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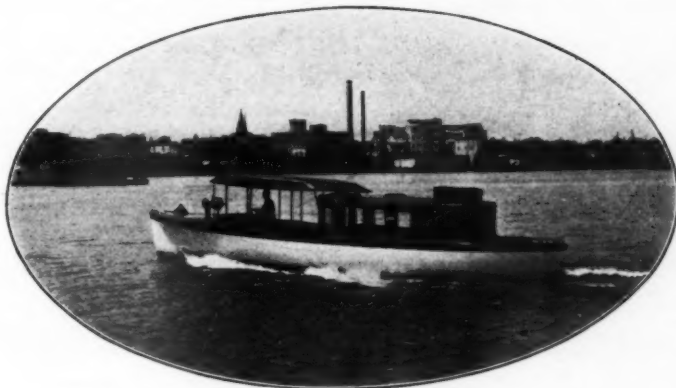
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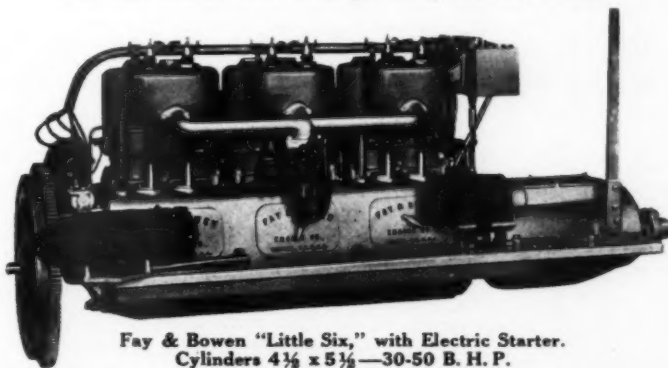
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